- Information Technology continues to evaluate evolving infrastructure requirements as the organization grows and equipment moves through typical lifecycles. Infrastructure includes network devices (e.g., routers, switches, firewalls), servers (e.g., mainframe, UNIX, Windows) and data storage (e.g., attached, Storage-Area Networks) that provide SWEPCO the computer systems and network connectivity to operate. We have also implemented the necessary tools and processes to comply with Sarbanes-Oxley requirements for our financial data.

- AEP continually negotiates and conducts strategic reviews with our major vendors to ensure we are effectively managing and achieving the optimal level of discounts based on volume of purchase (e.g., Oracle Perpetual License Agreement and Dell Enterprise License Agreement).

Q. WHAT TYPE OF CORPORATE OVERSIGHT OF INFORMATION TECHNOLOGY'S ACTIVITIES IS IN PLACE TO ENSURE THAT INFORMATION TECHNOLOGY'S SERVICES SUPPORT SWEPCO'S UTILITY SERVICE IN A COST-EFFECTIVE MANNER?

A. The corporate oversight process begins approximately six months prior to each calendar (fiscal) year. The Chief Financial Officer leads a process to establish O&M and capital budget guidelines for the following year. The Information Technology leadership team works within these guidelines to prioritize and plan detailed expenditures.

The O&M budget is managed through a collaboration of Information Technology and Corporate Planning & Budgeting (CP&B). Actual expenditures are monitored against the budget every month.

The capital budget is managed through a collaboration of operating companies, business units, Information Technology and CP&B. The AEP SubCompany Board grants final approval for major (over $2 million) capital investments each month. Investments below this threshold are evaluated and

prioritized by Information Technology governance boards in each business unit and ultimately approved by the leadership of the operating companies, business units and Information Technology. The planning process is used to prioritize capital investments for the following year. While some changes do occur during the year, for the most part, the highest priority capital projects are implemented.

G. Benchmarking

Q. ARE THERE ANY OTHER FACTORS THAT DEMONSTRATE THAT THE COSTS OF INFORMATION TECHNOLOGY SERVICES TO SWEPCO IN THE TEST YEAR ARE REASONABLE?

A. Yes. AEP uses benchmarks to compare the costs of our information technology services to its peers in the industry. Information Technology participates in a utility consortium (UNITE) to benchmark its costs against costs of other utilities. The UNITE consortium contracts the Gartner Group, the leading global analyst firm in the Information Technology industry, to provide the benchmarking framework and analysis of the cost components of an information technology function.

There are two data sets that show a comprehensive picture of AEP's informational technology costs. The first shows the latest set of data in comparison to the other members of the UNITE consortium, and the second shows the trend for AEP in each cost component.

Q. PLEASE DESCRIBE THE METHODOLOGY USED TO DEVELOP THE BENCHMARK AND COST TREND DATA.

A. Every other year, the companies in the UNITE consortium compare costs of providing Information Technology services for the previous fiscal year (which, in

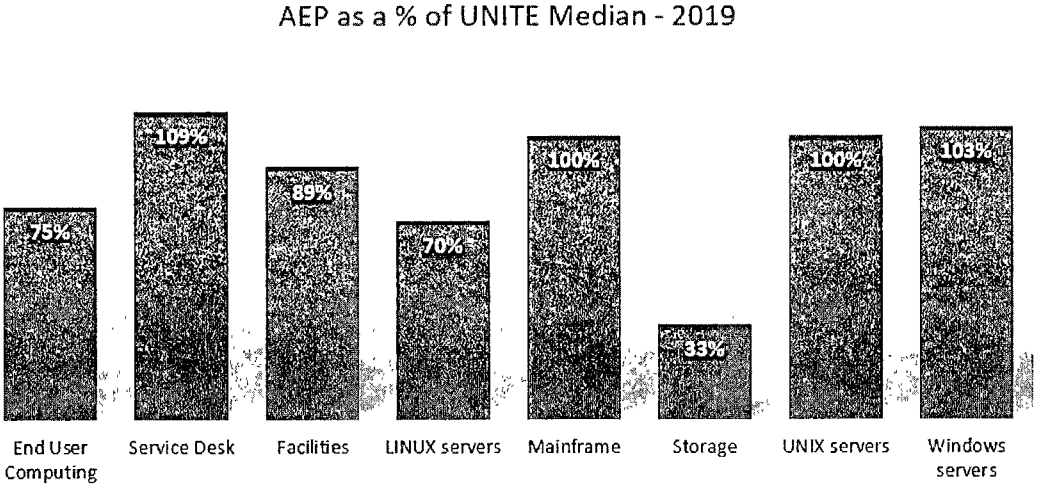
AEP's case, coincides with the calendar year). Total information technology costs are parsed into their several cost components (or technical "services"), covering hardware lease and maintenance costs, infrastructure software acquisition and maintenance costs, depreciation, and the staff required to support the technology.

The UNITE consortium also compares costs in other services where costs are incurred mostly for labor: operations management, disaster recovery, governance and service management, and application development and support. These services include only staff level comparisons and no cost comparisons because there is no standard measure available for these services and companies' investments are cyclical.

Q. HOW DO THE BENCHMARK MEASURES COMPARE TO OTHER COMPANIES?

A. AEP's benchmark metrics may be compared to the UNITE median reflected in Table 6 below. AEP's large geographic coverage and our numerous Operating Companies greatly increase the complexity of our organization in comparison to most other members of the consortium. In the 2019 benchmark, AEP is slightly above the median in only two services, but at or well-below for the remaining services.

Table 6

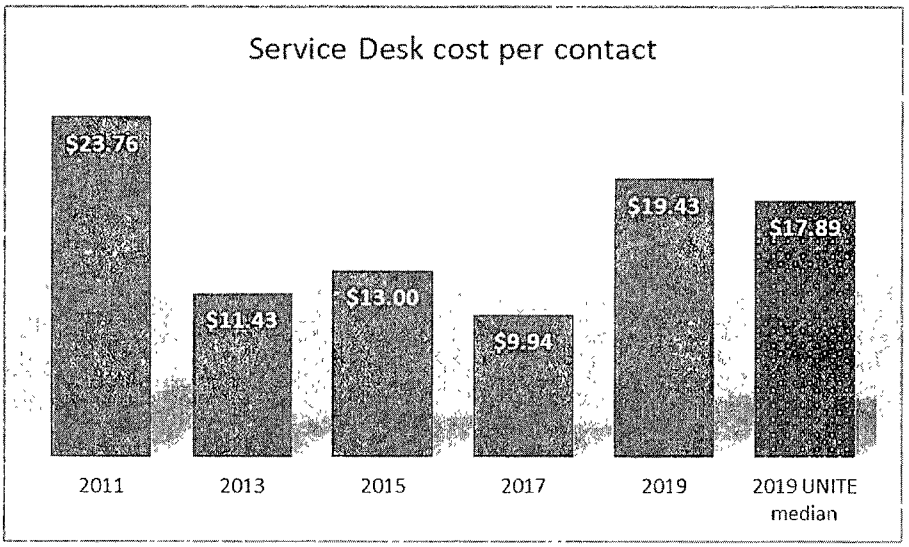


The above median result for the Service Desk was due to a high-volume year where over 18,000 end user workstations were lifecycled, an enterprise work and asset management system was implemented, and a third-party cellular support agreement was initiated, all of which increased Service Desk staff counts and costs. The slightly-above median result for Windows servers was due to the implementation of enterprise-scale applications requiring increased computing capability, resulting in the need to acquire larger virtualization hosts with increased capabilities.

Q. CAN YOU PLEASE DISCUSS PERTINENT TRENDS IN THE BENCHMARK DATA FROM 2011 THROUGH 2019?

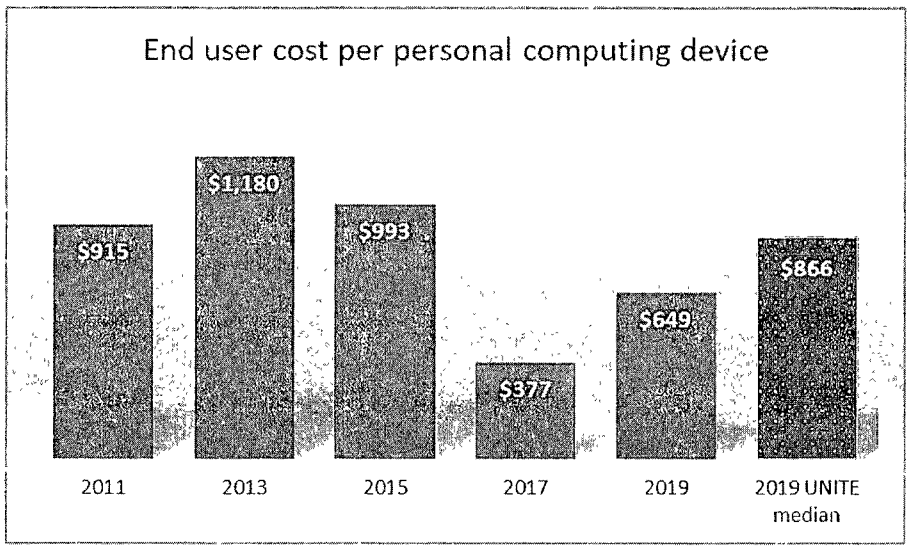
A. The following comments are based on data up to 2019 (the latest year for which we have data). The tables below are followed by a brief discussion of the trends.

Table 7



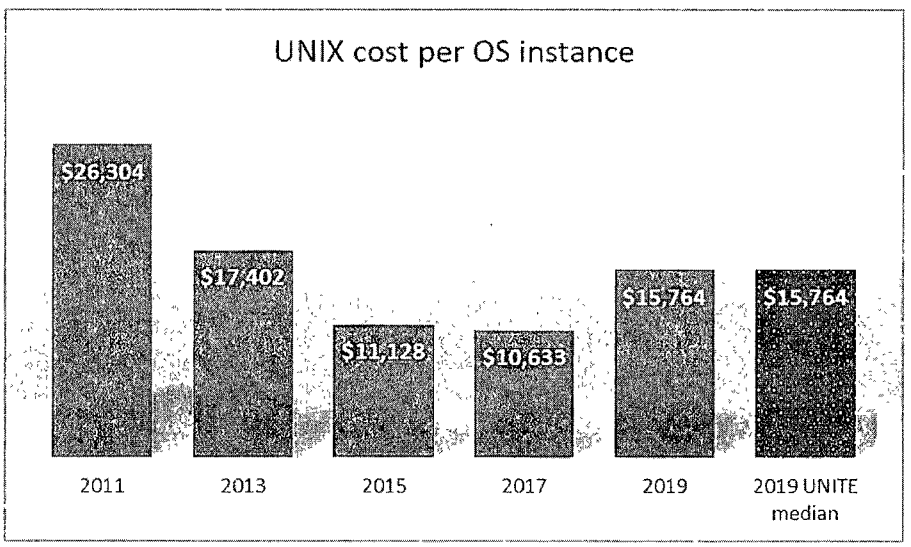
Service Desk costs are measured by 'cost per contact,' and we expect fluctuations in the number of calls to the Service Desk as new technologies are rolled out to users. We incur costs to maintain a reasonable level of service while managing increased call volume. As indicated in Table 7 above, there was a significant 2011 cost per contact, resulting from a reorganization of the Service Desk, while the subsequent and significant decrease in 2013 through 2017 indicates the benefits of the reorganization and additional process improvements. As mentioned earlier in my testimony, the 2019 result was due to a high-volume year where over 18,000 end user workstations were lifecycled, an enterprise work and asset management system was implemented, as well as the initiation of a third-party cellular support agreement, all adding to the increased Service Desk staff counts and costs.

Table 8



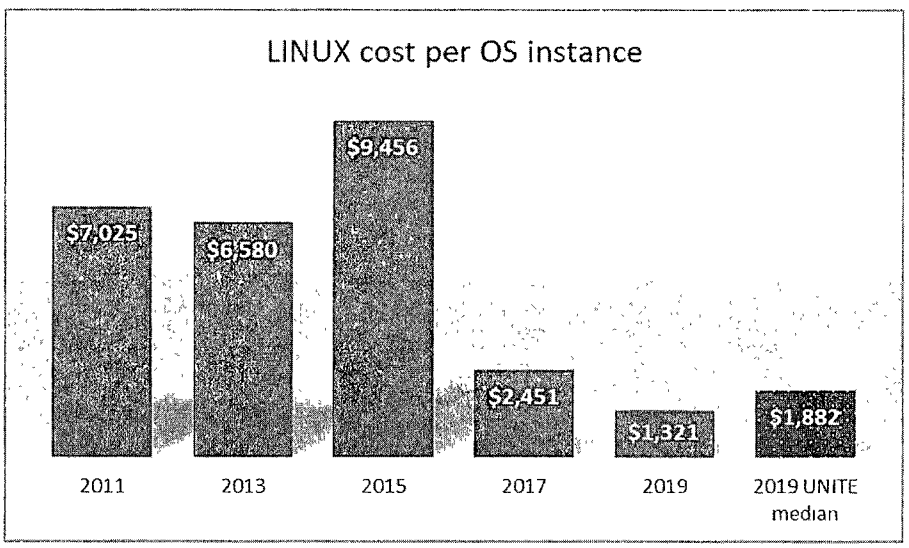
In 2013 and into 2014, and again in 2019, the majority of the end-user devices around the AEP system were replaced primarily to address Microsoft's end of support for the current operating system of that particular time. The costs include the one-time end-user device replacement costs. The cost decrease from 2015 into 2017 in Table 8 above reflects all workstations as being under lease.

Table 9



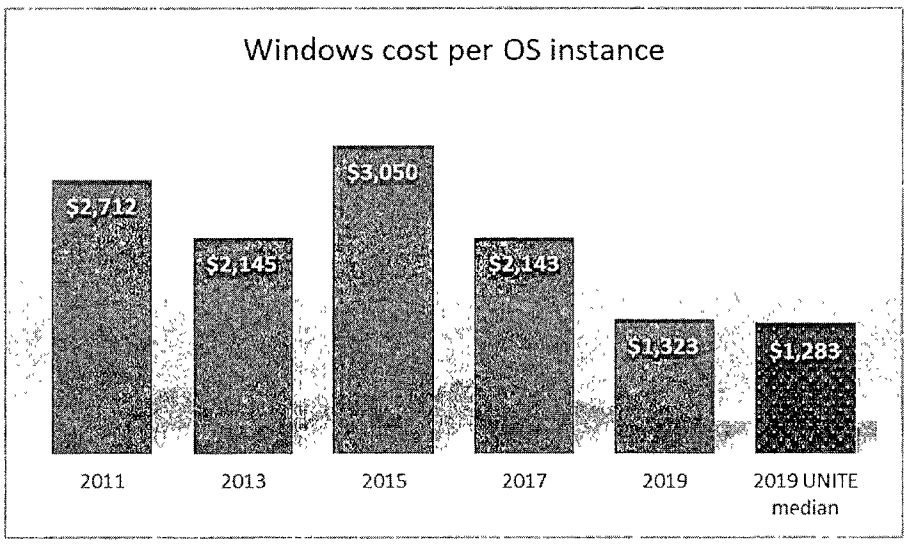
AEP has seen an increase in the use of UNIX servers for hosting major enterprise applications. The number of operating system (OS) instances is the best measure for this benchmark as it accounts for the use of virtualization (virtual UNIX servers) as a way to reduce costs and increase utilization of the physical hardware. The consistent decline from 2011 to 2017 in Table 9 above reflects reductions in both software and hardware due to the end of the hardware leases and careful consideration of requirements, as well as further virtualization and a shift in hosting to LINUX given its lower cost. In 2019, costs increased as a result of acquiring resources to replace existing UNIX 'end of useful life' hardware and to support the second data center. In both situations, resources had not been fully allocated in 2019 which impacted the per-unit cost. Our strategy includes purchasing larger systems capable of hosting virtualized 'guests' and lowering the data center footprint, thus reducing the total number of hardware units being managed. This strategy is expected to reduce per-unit costs over time.

Table 10



LINUX is used as an alternative to UNIX with a lower cost for the hardware, as can be seen in the lower cost per OS instance in Table 10 above as compared to UNIX. The increase in 2015 is due to having added database management and other software to the servers in this service in order to support the applications that are now being served by this equipment. LINUX has seen substantial growth in units over the past several years. We continue to move away from standalone servers and drive toward virtualized servers and use of LINUX 'containers' running on highly virtualized host environments. This strategy has provided cost improvements, as indicated by the 2017 and 2019 columns, along with increases in availability and system resilience.

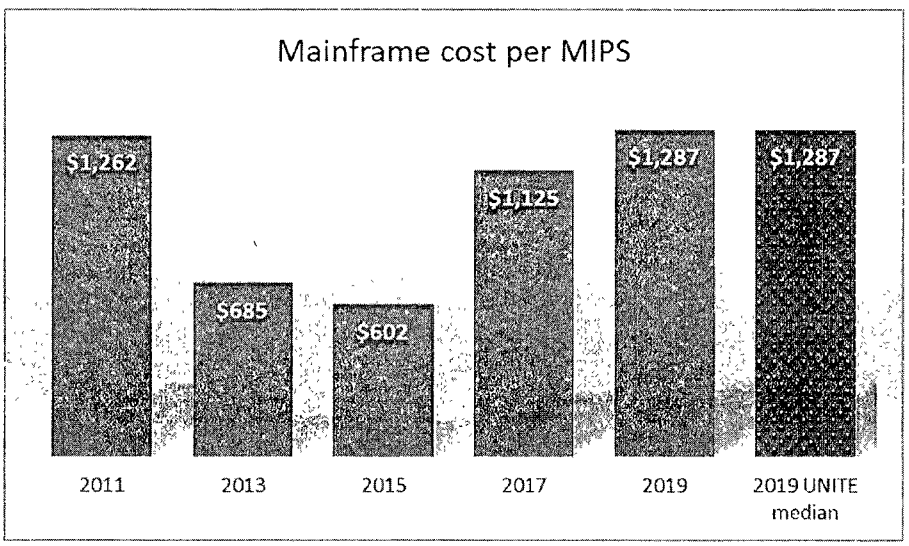
Table 11



Similar to the UNIX service, Intel servers running the Windows operating system are benchmarked using OS instances. The reduction in cost per OS instance through 2013, depicted in Table 11 above, reflects increased virtualization and a significant increase in the number of OS instances. The increase in 2015 is a result of

a refresh of this environment, both in hardware and software. We have had an increase in the number of physical servers and OS instances, along with a very significant increase in the cost of hardware and software. 2017 and 2019 reflect continued improvements to our performance driven by an increased use of HyperConverged hardware, which reduces Windows costs. Information Technology continues to look at potential physical to virtual conversion opportunities during AEP business application lifecycles, as well as ensuring the appropriate types of physical server combinations are utilized to enable reduced costs.

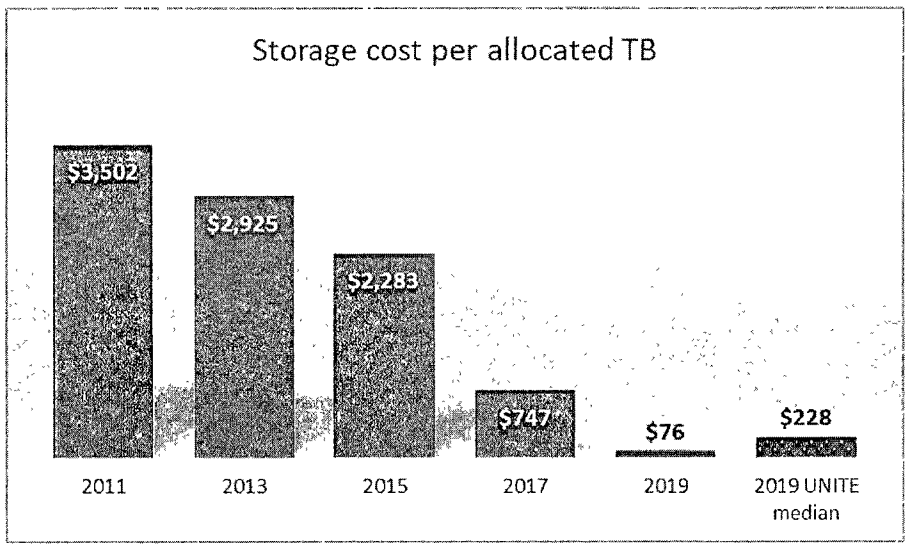
Table 12



AEP has a large investment in a mainframe platform since our marketing, accounting, and customer service applications run in this environment. The very large reduction in cost per Million Instructions Per Second (MIPS) from 2011 to 2013, depicted in Table 12 above, resulted from the introduction of "specialty engines." These are add-on processors that provide considerable processing power at very low incremental cost. In 2015, the reduction in cost continued as we obtained a new

mainframe processor and increased the number of MIPS while reducing the headcount supporting this platform. The column for 2017 reflects an update in the benchmark data collection approach (but we were still below the 2017 UNITE median), while 2019 costs increased based on the need to purchase a new mainframe for a second data center (but the results align with the benchmark median).

Table 13



The cost of storage has consistently decreased despite an ever-increasing demand for data storage across all areas of the business. AEP uses thin provisioning, deduplication, and compression to help control the cost of increasing demand, and we continue to allocate more storage each year, resulting in a lower cost per allocated terabyte, depicted in Table 13 above. In 2019, we saw a significant decrease in our costs (90%), while the UNITE median also went down significantly (70%) since the previous benchmark. The decrease can be attributed to Gartner changing their methodology for counting storage but is also an indication of industry allocation efficiencies.

As this benchmarking data shows, AEP has reduced the costs of many of the foundational information technologies year after year. We review these costs on a constant basis to look for more ways to reduce costs as business requirements change, technologies evolve, and costs decrease.

Q. ARE THERE ANY OTHER STUDIES THAT COMPARE AEP'S INFORMATION TECHNOLOGY PERFORMANCE WITH THAT OF OTHER COMPANIES?

A. For the eighth year in a row, AEP was in the top four utility companies in overall ease of use of utility websites/digital experience (four of those at number one), according to the J.D. Power 2019 Utility Digital Experience Study (formerly the Utility Website Evaluation Study). The largest U.S. electric, natural gas, and water utility companies are included in the study (67 in 2019). The websites and mobile apps are evaluated based on customer reports of their satisfaction after completing a standard set of tasks on their local utility's website and/or mobile app. The results of the 2019 study showed AEP's Operating Company websites and mobile app (including the site for SWEPCO: https://swepco.com/) to be the second most successful in the nation for customer satisfaction. These customer service functions were built by a partnership of Business Unit groups and the Information Technology team.

V. INFORMATION TECHNOLOGY CAPITAL

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. In this section of my testimony, I describe the information technology-related capital additions to rate base that reflect affiliate charges from AEPSC to SWEPCO.

Q. WHAT IS THE TOTAL AMOUNT OF INFORMATION TECHNOLOGY-RELATED CAPITAL INCLUDED IN SWEPCO'S RATE BASE SINCE ITS LAST BASE RATE CASE IN DOCKET NO. 46449 THAT CONSISTS OF INFORMATION TECHNOLOGY CHARGES?

A. The total for SWEPCO is $88,282,524.

Q. HOW ARE THE COSTS OF INFORMATION TECHNOLOGY CAPITAL PROJECTS CAPTURED AND TRACKED?

A. The affiliate capital costs are captured and billed in much the same way as other affiliate costs, using the AEPSC accounting processes and systems. The means of gathering and billing costs by work order is explained more fully in the testimony of Mr. Frantz. The capitalized software costs that I support are charged to work orders specific to a certain project, or charged to work orders established to capture ongoing software maintenance and routine application support of the distribution, transmission, and customer-service systems. These "routine" work orders for capitalized projects are known as blanket work orders. SWEPCO affiliate information technology capital additions include two blanket work orders for capitalized software, one for distribution-related projects and one for transmission-related projects. These services are either direct billed or allocated using the cost allocation principles described below and in the testimony of Mr. Frantz.

Q. HOW ARE THE AFFILIATE CAPITAL COSTS RECORDED AND TRACKED?

A. Capital charges are recorded by Information Technology to work orders by project. These work orders are set up to bill to appropriate benefiting locations using allocation factors that reflect cost causation principles. When these costs are billed to

the affiliates by AEPSC, most of the Information Technology work orders are summarized and charged to the blanket work orders for capital software. These work orders are separated by transmission and distribution projects.

Q. WHY IS A BLANKET WORK ORDER USED TO BILL THESE CAPITAL COSTS?

A. Blanket work orders are commonly used for capital projects that are smaller in scope and cost, usually high-volume and have the same depreciable life and plant accounting category (with a <$2,000,000 loaded cost threshold). This allows the company to more efficiently govern and account for these ongoing capital items, such as enhancement and development of software applications. It would not be practical to attempt to separately track and depreciate each instance of a programmer enhancing a program. Blanket work orders are a standard property accounting and industry solution to efficiently account for smaller capital investments.

Q. SINCE THE LAST RATE CASE, WHAT WERE THE MAJOR INFORMATION TECHNOLOGY-RELATED PROJECTS REFLECTED IN SWEPCO CAPITAL COSTS?

A. The majority of the capital projects relate to computer system installations and upgrades/enhancements that are used in the business operations areas of SWEPCO. The key projects with costs in excess of $1,000,000, along with a description of the benefits, are listed in EXHIBIT GAF-1 – Information Technology Capital Projects.

Q. WHAT PROCESSES DOES INFORMATION TECHNOLOGY HAVE IN PLACE TO ENSURE THAT THE COSTS OF THESE PROJECTS ARE REASONABLE?

A. I have already described in section IV of my testimony the internal planning, budgeting, approval, and quality control that combine to control the costs of Information Technology O&M. These same processes equally apply and are utilized to control Information Technology capital project costs. Each capital project over $500,000 includes an evaluation of the options considered, including a high-level assessment of costs and benefits of each option (e.g., buy a solution vs. build a solution). Project estimates are prepared after an analysis phase that includes collaboration of business partners, system analysts, and application developers. Estimates are reviewed and refined through a series of increasingly narrower thresholds to the final approval. The estimates are reviewed by Information Technology management and approved on a weekly basis. If a third party is engaged, the project is bid to multiple vendors. In addition, each project is approved by both Information Technology management and Business Unit management. The proposal for each project identifies the high-level requirements and goals for the project. Once a proposal is approved, it becomes an active project with a Business Unit sponsor. Each project is actively monitored to ensure that the requirements are met and the project is within budget. Moreover, the overall staffing trends and benchmarking comparisons I have discussed previously support the conclusion that we have a reasonable amount of staff devoted to these and other information technology projects.

VI. SUMMARY AND CONCLUSION

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. I have discussed the information technology services provided to SWEPCO by AEP Information Technology. I have demonstrated that SWEPCO's information technology O&M costs are reasonable and necessary by describing a combination of process improvements, cost and staffing trends, budgeting controls and benchmarking comparisons.

Finally, I have described the affiliate Information Technology capital additions and reasons that they are reasonable and necessary.

In summary, my testimony supports the conclusion that Information Technology capital and Test Year O&M charges satisfy Commission standards for inclusion in SWEPCO's rates.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

EXHIBIT GAF-1 Information Technology Capital Projects

Year(s)	Project	Dollar Amount	Description
2016-Test Year	ITSSV1558 Oracle Strategic Agreement	$12,638,902	Following a 10-year IT planning exercise and an assessment of AEP's current state, IT and several corporate partners agreed to commit to one infrastructure and application solutions vendor for most enterprise solutions. In the electric utility industry, the enterprise solutions market is evenly split between SAP and Oracle. Since AEP's existing solutions included several Oracle products and (effectively) no SAP products, the IT team and application users were more familiar with Oracle solutions. This familiarity with Oracle solutions was an important factor in the decision to commit to Oracle as a strategic partner. A commitment to the Oracle set of products opened up the opportunity for AEP to become one of a handful of Key Accounts (KA) in the U.S. utility industry sector. In turn, the KA status opened up the opportunity to create a strategic, 10-year agreement for AEP. This agreement is designed to give AEP access to Oracle's entire on premise software catalog, a significant discount on future implementations of cloud-based solutions, and a significant total cost of ownership savings over a standard, non-strategic procurement approach. Further, a proactive, deliberate effort to simplify AEP's solution architecture with a single vendor's technology will introduce efficiencies and innovation to position AEP as the utility of the future.
2016-Test Year	ITPFP1421 Maximo Implementation	$11,243,276	Enterprise Asset Renewal - Maximo Implementation. The purpose of this project is to implement IBM Maximo to replace the ABB Asset Suite. IBM Maximo Asset Management is an enterprise asset management (EAM) software solution product produced by IBM. It is a solution which is used to operate, maintain and dispose of enterprise assets. The IBM Maximo implementation is a key element of AEP's Cornerstone Program, which was established to build shared enterprise business processes in support of AEP's efforts to keep pace with energy company technological innovation. The Program is focused on improving the management and performance of utility business and operations supported by modernized technology platforms and efficient business processes.
2016-Test Year	ITSSV1578 Data Center 2	$6,481,582	AEP has taken significant strides to improve operational reliability and sustainability of our Information Technology (IT) infrastructure and applications, by implementing a Tier III data center in New Albany, Ohio. The next step is to improve AEPs disaster recovery (DR) capabilities, currently located in Roanoke, Virginia, to better support current business requirements. This Improvement Requisition is for the build-out of the IT infrastructure for a second, back-up, data center within 50 miles of New Albany to specifically design to improve disaster recovery.
2016-Test Year	ITSSV0003 IT Shared Services Blanket	$3,619,794	Blanket work orders are commonly used for capital projects that are smaller in scope and cost, usually high-volume and have the same depreciable life and plant accounting category. This allows the company to more efficiently govern and account for these ongoing capital items, such as maintenance and development of software applications. It would not be practical to attempt to separately track and depreciate each instance of a programmer modifying a program. Blanket work orders are a standard property accounting and industry solution to efficiently account for smaller software capital investments. For example, enhancements to ARCS and ShareNow, weblogic upgrade, and Analytic tools.

EXHIBIT GAF-1 Information Technology Capital Projects

Year(s)	Project	Dollar Amount	Description
2016	ITUOP1531 Customer Relationship Mgmt Sys	$3,095,900	The AEP Customer Experience (CX) program improves customer satisfaction by elevating the customer experience and improving the way AEP communicates and does business with its customers. New tools and enhanced processes were required to achieve this objective at AEP. This investment implements the Oracle CX Suite of tools for Customer Relationship Management (CRM). Implementation of the Oracle Cx Suite builds the foundation of one enterprise system with one 360 degree view of the customer. Phase 1 of 3 of the requisition includes CRM system planning.
2016-2017	ITSSV1608 IT Dell EMC ELA	$3,023,569	AEP has been running both Dell and EMC products under an Enterprise License Agreement (ELA) for several years. AEP runs software and hardware from both companies that provide extensive business benefits. Dell/EMC products support AEP's storage requirements, virtual environments, business continuity and disaster recovery plans. As such, their products serve as the backbone for AEP business applications. The current ELA is set to expire in April 2018. With Dell's recent purchase of EMC, the Infrastructure Team identified an opportunity to combine their current agreements and renew early to obtain significant discounts. Additionally, the vendor offered further incentives to extend the agreement from a 3-year to a 5-year term. Five-year agreements come with T-Credits, which are credits that can be used across Dell, EMC or VMWare for software, services and education. The 5-year commitment also comes with additional discounts for hardware and will lock in production support and subscription savings. Extending the term of this contract will reduce administrative costs. This requisition funds a 5-year license renewal contract with Dell/EMC, preventing the need to terminate access to the solutions, and thus avoiding business continuity impacts to the many business units that are running the supported business applications.
2017-Test Year	ITCOP0001 IT Commercial Ops Blanket	$1,981,015	Blanket work orders are commonly used for capital projects that are smaller in scope and cost, usually high-volume and have the same depreciable life and plant accounting category. This allows the company to more efficiently govern and account for these ongoing capital items, such as maintenance and development of software applications. It would not be practical to attempt to separately track and depreciate each instance of a programmer modifying a program. Blanket work orders are a standard property accounting and industry solution to efficiently account for smaller software capital investments. For example, enhancements to WeatherPortal, PowerBroker, PowerManager, and nMarket applications.
2017	ITSSV1510 Cyber Attack Resiliency Prgrm	$1,900,795	The Cyber Attack Resiliency (CAR) Program is a risk-mitigation effort. The solution considered both technical and business recovery strategies to recreate AEP's operations data in the event of a cyber-attack that destroys or locks production data in the New Albany & Roanoke data centers. AEP partnered with EY and Dell EMC to implement a solution that protects AEP from a total data loss in the event of certain types of cyber-attacks.

EXHIBIT GAF-1 Information Technology Capital Projects

Year(s)	Project	Dollar Amount	Description
2018-Test Year	ITSSV1612 IT IBM ELA	$1,669,065	The existing IBM Enterprise License Agreement (ELA) expired June 30, 2018. The Applications and Infrastructure teams identified an opportunity to renegotiate the ELA in a manner that will add value and reduce total cost of ownership for the next three years. AEP has a significant deployment of IBM products used by Cyber Security, Asset Management, Analytic Services, and Infrastructure. IT worked with technologists representing various AEP departments to develop a list of IBM applications that AEP has deployed or plans to deploy. This list served as the starting point for negotiations with IBM. The goal was to ensure all programs included in the ELA are currently in production or planned to be deployed to production within the term of the ELA. Procurement has negotiated lower maintenance fees which will be recognized across the three-year term and has locked in not-to-exceed pricing for years four and five. Several new initiatives using IBM tools have been identified, and whose adoption will be enabled by extension of the ELA. For example, the Infrastructure team has been looking for an applications monitoring system to replace our current tool from BMC Software. A proof of concept running IBM Netcool with Predictive Insights ran earlier this year. Once the pilot is complete, AEP will likely need additional licenses to support the monitored environment, which will also be facilitated by the ELA extension. Analytics is deploying IBM's data governance tools to improve AEP's reporting needs. Our recent deployment of Cognos is being expanded in the environment to replace the legacy reporting system, Business Objects. These are just a few of the initiatives that have been incorporated into the renewed ELA.
2018-Test Year	ITUOP0005 IT Utility Operations Blanket	$1,592,962	Blanket work orders are commonly used for capital projects that are smaller in scope and cost, usually high-volume and have the same depreciable life and plant accounting category. This allows the company to more efficiently govern and account for these ongoing capital items, such as maintenance and development of software applications. It would not be practical to attempt to separately track and depreciate each instance of a programmer modifying a program. Blanket work orders are a standard property accounting and industry solution to efficiently account for smaller software capital investments. For example, Enhancements to MACSS, EE Data Feed, and M.O.M.
2018-2019	ITSSV1481 EMC Lease Buyout Storage Appl	$1,361,831	The Infrastructure Complex Services team identified hardware as to which advances in the technology justified purchase with capital funds rather than leasing. New versions of the EMC SAN (Storage Area Network) and storage appliances came with software pre-loaded, and the technical teams used menus to configure the units. Because specific new functionality was required, and the selected vendor only sells that functionality as an integrated software and hardware appliance, the acquisition cost of the hardware was properly capitalized as a software appliance.

EXHIBIT GAF-1 Information Technology Capital Projects

Year(s)	Project	Dollar Amount	Description
2017-Test Year	ITGEN0004 IT Generation Blanket	$1,282,318	Blanket work orders are commonly used for capital projects that are smaller in scope and cost, usually high-volume and have the same depreciable life and plant accounting category. This allows the company to more efficiently govern and account for these ongoing capital items, such as maintenance and development of software applications. It would not be practical to attempt to separately track and depreciate each instance of a programmer modifying a program. Blanket work orders are a standard property accounting and industry solution to efficiently account for smaller software capital investments. For example, enhancements to eSOMs (Operator Rounds, Logbooks Clearance Permits), Primavera P6 (Project Scheduling), Engineering software tools, and Analytics solutions..
2018	ITSSV1596 Fleet Vehicle Telematics	$1,142,192	AEP Supply Chain and Fleet Operations department desired to provide the Telematics service for 7000+ fleet vehicles (including Distribution, Transmission, Generation, and Shared Service) to improve driver behavior and safety performance. Implementation of Telematics is also expected to achieve cost savings through improved vehicle utilization and fuel saving through idling optimization. The additional evidence provided by the system in the event of an accident aid in litigation investigation and improves efficiencies in utilization of labor resources. The solution includes integrations to systems including PowerOn Restore and other down-stream systems.
2019-Test Year	ITSSV1604 ITMP 2018	$1,095,779	Corporate and Cyber Security risks have been identified in association with the use of old and outdated versions of various technologies. The Enterprise Architecture Review Board has categorized the following technologies as "Technology Risk and Obsolescence," meaning they need to be remediated: Java, .NET, MS Access, VB6, Classic ASP, Lotus Notes and others. This project funded the program for 2018 to continue the work started in 2017 to remediate these technology risks based on the level of risk and/or the business priorities. The remediation of the vulnerabilities is key to improving AEP's overall compliance and prevention of risks to data and/or AEP's business reputation. This effort utilized a third-party professional services provider engagement to remediate risks due to running outdated technology by working with AEP's business units to identify and prioritize target applications.
2016-Test Year	ITSSV1671 2019 IT Modernization Program	$1,073,418	Corporate and Cyber Security risks have been identified in association with the use of old and outdated versions of various technologies. The Enterprise Architecture Review Board has categorized the following technologies as "Technology Risk and Obsolescence," meaning they need to be remediated: Java, .NET, MS Access, VB6, Classic ASP, Lotus Notes and others. This project funded the program for 2019 to continue the work started in 2016 to remediate these technology risks based on the level of risk and/or the business priorities. The remediation of the vulnerabilities is key to improving AEP's overall compliance and prevention of risks to data and/or AEP's business reputation. This effort utilized a third-party professional services provider engagement to remediate risks due to running outdated technology by working with AEP's business units to identify and prioritize target applications.

EXHIBIT GAF-1 Information Technology Capital Projects

Year(s)	Project	Dollar Amount	Description
2016-Test Year	ITSSV1491 ServiceNow License Renewal	$1,039,777	AEP purchased ServiceNow in 2011 with a 5-year license agreement. That agreement expired in mid-December, 2016. Since inception, the utilization of the ServiceNow application has grown tremendously, beginning with Information Technology and organically growing to serve other business units including Transmission, Distribution, Generation, Workplace Services, Telecom, Fleet, Supply Chain, and NERC CIP. ServiceNow quickly became a primary component to support work management and critical business processes for all of these organizations. This 5-year license renewal contract with ServiceNow prevented termination of access to the solution, and thus avoided business continuity impacts to the many business units that have chosen to automate processes within the application.
2017-Test Year	ITTRN1272 Transmission IT Projects Blank	$1,009,289	Blanket work orders are commonly used for capital projects that are smaller in scope and cost, usually high-volume and have the same depreciable life and plant accounting category. This allows the company to more efficiently govern and account for these ongoing capital items, such as maintenance and development of software applications. It would not be practical to attempt to separately track and depreciate each instance of a programmer modifying a program. Blanket work orders are a standard property accounting and industry solution to efficiently account for smaller software capital investments. For example, Enhancements to RTO Central, Scopebuilder and TGIS.

EXECUTIVE SUMMARY OF SCOTT E. MERTZ

Scott E. Mertz is Regulatory Consultant Staff for American Electric Power Service Corporation (AEPSC). In that position, Mr. Mertz advises and supports activities related to recovery of expenses associated with wholesale power transactions in the various jurisdictions served by the American Electric Power Company, Inc. (AEP) Operating Companies.

Mr. Mertz addresses the operations and costs of the AEPSC Commercial Operations Group. He explains how the Commercial Operations Group is organized to provide dispatch and related services to Southwestern Electric Power Company (SWEPCO) and the AEP operating companies and why the specific services provided to SWEPCO support SWEPCO's provision of reliable and economic utility services. He also demonstrates that the costs billed to SWEPCO for Commercial Operations are reasonable and necessary. Mr. Mertz also describes the capacity purchase contract included in base rates and shows that SWEPCO's capacity purchases and costs included in the case have been reasonably incurred and are necessary for the provision of electric service to SWEPCO's customers.

AEPSC's Commercial Operations group charged SWEPCO $3,555,269 for its services during the adjusted test year. Mr. Mertz establishes the reasonableness of these costs by demonstrating the benefits SWEPCO and its customers receive from the associated activities, the actual performance of Commercial Operations compared to its budget during the test year and the previous three years, and the downward trend in costs charged to SWEPCO by Commercial Operations.

PUBLIC UTILITY COMMISSION OF TEXAS

APPLICATION OF

SOUTHWESTERN ELECTRIC POWER COMPANY

FOR AUTHORITY TO CHANGE RATES

DIRECT TESTIMONY OF

SCOTT E. MERTZ

FOR

SOUTHWESTERN ELECTRIC POWER COMPANY

OCTOBER 2020

2020

TESTIMONY INDEX

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.

A. My name is Scott E. Mertz, and I am Regulatory Consultant Staff for American Electric Power Service Corporation (AEPSC). AEPSC is a subsidiary of American Electric Power Company, Inc. (AEP). My business address is 1 Riverside Plaza, Columbus, Ohio 43215.

Q. WOULD YOU PLEASE DESCRIBE YOUR RESPONSIBILITIES AS REGULATORY CONSULTANT STAFF?

A. My responsibilities include advising and supporting Commercial Operations, regulatory teams and witnesses on areas including Regional Transmission Organizations (RTO) operations, wholesale markets, and off-system sales. I have provided support related to AEP's Commercial Operations activities in regulatory filings across all of AEP's eleven state jurisdictions and at the Federal Energy Regulatory Commission (FERC).

Q. WOULD YOU PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE?

A. I graduated from the University of Kentucky with a Bachelor of Science degree in Finance and a minor in Economics, in 1996. I continued my education at the University of Louisville, receiving my MBA in 1999. In 2000, I joined AEPSC as an Energy Coordinator on their West Coast Trading Desk. In 2003, I was promoted to Lead Trader-Manager for the West Coast Trading Portfolio where I was responsible for the daily management and profitable, measured unwinding of our west coast positions.

Upon the exit of our West Coast Trading Portfolio in 2007, I transferred to Regulatory Services. I was promoted to my current role of Regulatory Consultant Staff in 2016.

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY BEFORE ANY REGULATORY AGENCY?

A. Yes. I have filed testimony before commissions in Texas, Arkansas, and Indiana. I have also filed testimony at the Federal Energy Regulatory Commission (FERC). I have testified on the subjects of purchased power, generation dispatch, and other power system matters.

II. PURPOSE OF TESTIMONY

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. In my testimony:

- I describe the AEPSC Commercial Operations Group and how it is organized to provide dispatch and related services to Southwestern Electric Power Company (SWEPCO or the Company) and other AEP operating companies.
- I discuss the specific types of services provided to SWEPCO by the Commercial Operations Group and how they are reasonable and necessary to support SWEPCO's provision of reliable and economic utility service. Company witness Amy E. Jeffries addresses the Fuel Procurement organization under the Commercial Operations Group.
- I demonstrate that the costs billed to SWEPCO for Commercial Operations services are reasonable and necessary.
- I describe SWEPCO's capacity purchase contracts included in base rates.
- I will demonstrate that SWEPCO's capacity purchases and costs included in this filing have been reasonably incurred and are necessary to the provision of electric service to SWEPCO's customers.

Q. ARE YOU SPONSORING OR CO-SPONSORING ANY SCHEDULES INCLUDED IN THIS FILING?

A. Yes. I am sponsoring or co-sponsoring the following schedules:

Schedule	Description	Co-Sponsor(s)
H-12.2a	MWh Production by Unit (Lignite/Coal/Nuclear)	McMahon
H-12.2a1	MWh Production for Previous 5 Years (Lignite/Coal/Nuclear)	McMahon
H-12.2b	MWh Production by Unit (Natural Gas/Oil))	McMahon
H-12.2b1	MWh Production for Previous 5 Years (Natural Gas/Oil)	McMahon
H-12.4a	Firm Purchased Power	
H-12.4c	Firm Purchased Power Fixed Costs	
H-12.4d	Firm Purchased Power Energy Costs per MWH	

III. COMMERCIAL OPERATIONS' MISSION

Q. WHAT IS THE MISSION OF COMMERCIAL OPERATIONS?

A. Commercial Operations' mission is to coordinate the dispatch of AEP's generation fleet and to engage in bulk power market activity, first to economically supply AEP Operating Companies' customers' native load requirements in the least-cost manner and then to produce off-system sales margins to help lower customer rates.

The West Operating Agreement (West OA) and the System Integration Agreement (SIA) are the FERC-approved documents that set forth the guiding principles under which Commercial Operations provides services to SWEPCO. The West Operating Agreement provides the contractual basis for the coordinated planning and operation of the AEP West power system to achieve economic benefits for SWEPCO customers. The SIA provides for the centralization of off-system trading and

marketing activities, and became effective following consummation of the merger between AEP and Central and South West Corporation on June 15, 2000.

Q. WHICH AEP COMPANIES ARE SUPPORTED BY THE COMMERCIAL OPERATIONS GROUP?

A. Commercial Operations supports and acts as agent for the vertically integrated operating companies of AEP. These Operating Companies are: Appalachian Power, Indiana Michigan Power, Kentucky Power (three AEP East Operating Companies), Public Service Company of Oklahoma, and Southwestern Electric Power Company (two AEP West Operating Companies). Commercial Operations does not engage in market activities for AEP's deregulated operations and is functionally and physically separate from the personnel that perform that function.

Q. PLEASE DESCRIBE IN MORE DETAIL THE PORTIONS OF THE WEST OPERATING AGREEMENT AND SYSTEM INTEGRATION AGREEMENTS THAT GOVERN THE SERVICES THAT COMMERCIAL OPERATIONS PROVIDES TO SWEPCO.

A. The responsibilities of AEPSC, implemented in part through the Commercial Operations Group, are described in the West Operating Agreement and the SIA. The following descriptions and accompanying excerpts relate directly to the role and responsibilities of Commercial Operations.

Under the West Operating Agreement, Amended March 1, 2014, Commercial Operations serves as the Agent responsible to fulfill the following obligations:

Section 3.1 – Purpose

The purpose of this Agreement is to provide the contractual basis for coordinating the planning, operation, and the maintenance of the power supply resources of the Operating Companies to achieve economies and efficiencies consistent with the provision of reliable electric service and an equitable sharing of the benefits and costs of such coordinated arrangements.

Section 5.1 – Agent's Functions

(a) evaluate and make recommendations concerning the adequacy of power supply resources to meet the load requirements of the Operating Companies or to make off-System sales, including generation additions, retirements, acquisitions and dispositions;

(b) coordinate the operation and maintenance of the Operating Companies' respective power supply resources;

(c) administer the participation of each Operating Company in the power markets of the applicable regional transmission organization, including the settlement and dispatch of each Operating Company's power supply resources in accordance with the rules of the applicable regional transmission organization;

Section 7.3 – Capacity Sales

Whenever any Operating Company has surplus capacity and the other Operating Company has insufficient capacity, the Agent shall evaluate the feasibility of a capacity transaction between the Operating Companies...

The Operating Company with insufficient capacity shall make payments to the Operating Company with surplus capacity for each month that a Capacity Commitment applies in the amount of the Capacity Commitment Charge in accordance with Schedule C...

Under the SIA, Amended June 1, 2014, Commercial Operations acts as the Agent responsible to fulfill the obligations described below:

Section 3.1 - Purpose

The purpose of this Agreement is to provide the contractual basis for the equitable sharing of Trading and Marketing Activities between the AEP East Operating Companies and the AEP West Operating Companies, and for any other purposes set forth herein.

Section 5.1 – Agent's Functions

The Parties hereby designate AEPSC as their Agent for the purposes of:

(a) Conducting Trading and Marketing Activities on behalf of all the Operating Companies that are parties to this Agreement;

(b) Developing all bills and billing information among the Parties pursuant to this Agreement; and

(c) Such other activities and duties as may be assigned from time to time by the Operating Committee.

Section 7.1 – Centralized Trading and Marketing Activities

All Trading and Marketing Activities initiated or concluded after the effective date of this Agreement shall be conducted centrally under the direction of the Agent.

Q. WHAT ARE SWEPCO'S ADJUSTED TEST YEAR COSTS FOR THE SERVICES PROVIDED BY THE AEPSC COMMERCIAL OPERATIONS GROUP?

A. The charges to SWEPCO for the AEPSC Commercial Operations class of services for the adjusted test year are $3,555,269. The specific departments that comprise the Commercial Operations class of service, and benefiting location and allocation factors, are detailed in Company witness Brian J. Frantz's Exhibit BJF-2. The following chart, Table 1, shows the primary departments in Commercial Operations, which provide services to SWEPCO:

Table 1

Commercial Operations Services Billed to SWEPCO During the Test Year		
	Test Year	% Total
Real Time Operations	$1,630,519	46%
Commercial and Financial Analysis	$947,334	27%
Administrative Functions	$678,423	19%
Commercial Operations Application and Project Support (CAPS)	$195,504	5%
Energy Marketing and Renewables	$103,489	3%
Total Commercial Operations	$3,555,269	

I will discuss the services provided by each of these departments in the section below.

IV. DESCRIPTION OF COMMERCIAL OPERATIONS DEPARTMENTS

Q. PLEASE DESCRIBE HOW THE COMMERCIAL OPERATIONS GROUP IS ORGANIZED TO PROVIDE SERVICES TO SWEPCO.

A. The AEPSC Commercial Operations Group is led by a Senior Vice President who has overall responsibility to coordinate the dispatch of AEP's generation fleet and to engage in bulk power market activity, in accordance with the principles described in the West Operating Agreement and the SIA. In providing services to SWEPCO, the Commercial Operations Group is structured around six core functions: (1) Real Time Operations; (2) Commercial and Financial Analysis; (3) Administrative Functions; (4) CAPS; and (5) Energy Marketing and Renewables. The sixth core function, Fuel Procurement, which is discussed by Company witness Jeffries is excluded from Table

1. The following descriptions of activities performed by Commercial Operations are limited to a discussion concerning the first five core functions.

Real Time Operations - $1,630,519

Q. PLEASE DESCRIBE THE REAL TIME OPERATIONS DEPARTMENT.

A. The Real Time Operations department works closely with the Southwest Power Pool (SPP) RTO to optimize SWEPCO's resource and load requirements portfolio across a range of time frames. Additionally, the Energy Trading group within the Real Time Operations department, as described further in my testimony, provides an additional layer of benefits to SWEPCO's customers. The three groups within the Real Time Operations department are (1) Real Time Market Operations, (2) Day Ahead Market Operations, and (3) Energy Trading.

Q. PLEASE DESCRIBE THE SERVICES PROVIDED TO SWEPCO BY THE REAL TIME MARKET OPERATIONS GROUP.

A. The Real Time Market Operations support group is primarily composed of the 24-hour generation dispatch function. The Generation Dispatch personnel are responsible for the real-time economic dispatch of AEP's SPP generation fleet, including SWEPCO's generating units in Texas, Louisiana, and Arkansas, to ensure that this fleet provides electric power and energy to native load customers at the lowest reasonable cost. These employees manage available generation resources in response to system load, transmission needs, and market requirements. Generation Dispatch personnel are also responsible for communicating resource schedule changes to the applicable RTOs, such as the SPP in SWEPCO's case, acting on information regarding the system

received from the RTO, managing curtailments and outages, and coordinating the fuel supply to the SPP units.

Q. PLEASE DESCRIBE THE SERVICES PROVIDED TO SWEPCO BY THE DAY-AHEAD RTO OPERATIONS GROUP.

A. Since the launch of the SPP Integrated Marketplace on March 1, 2014, the Day-Ahead Operations group has existed to manage the new complexities and responsibilities resulting from the launch of SPP's day two market. Day-Ahead Operations personnel have the primary responsibility (for periods beyond the immediate operating day) for the coordination and to be the primary interface between AEP's generation fleet and the wholesale energy/RTO markets. The wide range of activities engaged in by this group includes the development of generation and load requirement forecasts, the provision of accurate and timely weather forecasts and the process of bid development to inform SWEPCO's daily submission of bids into the SPP Integrated Marketplace (SPP IM). These employees are also responsible for safely and reliably optimizing the generation fleet by assessing unit status and capability, economically scheduling curtailments and outages, and providing technical analysis regarding unit commitment decisions to various groups within Commercial Operations. The Day-Ahead RTO Operations group also engages in congestion analysis. Congestion analysis involves the computer modeling of various system load levels and associated generation sources to determine which transmission paths are most likely to become congested. Congestion Analysis personnel also evaluate the potential price impacts of the various supply/demand scenarios. Such analysis comprises one of the data sets used by

Commercial Operations personnel to economically dispatch SWEPCO's power supply portfolio.

Q. PLEASE DESCRIBE THE SERVICES PROVIDED BY THE ENERGY TRADING DEPARTMENT.

A. The energy trading department is involved in gathering energy market prices across a wide variety of time horizons. The team provides market insight by updating forward curves as available which aid in modeling and forecasting of Locational Market Prices (LMP's). The energy trading group is a key link in the process of optimizing SWEPCO's load and resource portfolio within the SPP IM.

Commercial and Financial Analysis - $947,334

Q. PLEASE DISCUSS COMMERCIAL AND FINANCIAL ANALYSIS, AND THE SERVICES IT PROVIDES TO SWEPCO.

A. Commercial and Financial Analysis encompasses three major areas of service: 1) Commercial Services, 2) Generation Forecasting, and 3) Risk Management and Scheduling. Each of those three departments is discussed below.

Q. PLEASE DESCRIBE THE SERVICES PROVIDED TO SWEPCO BY COMMERCIAL SERVICES.

A. Commercial Services personnel are responsible for the complete and accurate accounting and invoicing for all energy commodity transactions. These responsibilities include the reconciliation of RTO and Commodity Settlement systems with other internal systems, and with external counterparties. SPP settlements data must be validated and monitored for accuracy and any billing errors must be resolved through SPP's Billing Dispute process. The Commercial Services group is also responsible for

administering the portions of the West OA and the SIA dealing with affiliate transactions and third-party energy transactions. And, they are responsible for filing mandatory FERC electric quarterly reports.

Q. PLEASE DESCRIBE THE SERVICES PROVIDED TO SWEPCO BY GENERATION FORECASTING.

A. The Generation Forecasting group creates and implements processes to optimize the physical operation of the system and work to continually improve their forecasting accuracy. They perform frequent forecast updates and provide variance analysis, reconciling the impact of actual results with forecasts. Generation Forecasting personnel make extensive use of statistical data modeling and simulation tools with a focus on integrating SWEPCO's resources and load obligation within the broader context of the SPP IM. They are also responsible for modifying and enhancing the existing generation and cost settlement forecasting tools to adjust to any changes in operations.

Q. PLEASE DESCRIBE THE SERVICES PROVIDED TO SWEPCO BY THE RISK MANAGEMENT AND SCHEDULING GROUP.

A. Risk Management and Scheduling provides operational results reporting and activities related to Power Cost Recovery. More specifically, these personnel participate in budget development, financial reporting, and analysis of activities pertaining to operating agreements. Additionally, the group is responsible for the significant scheduling and reporting requirements related to the SPP IM.

Administrative Functions - $678,423

Q. PLEASE DESCRIBE THE ADMINISTRATIVE SERVICES PROVIDED TO SWEPCO BY THE COMMERCIAL OPERATIONS DEPARTMENT.

A. The Administrative Function is composed of two major groups of costs. The first group of costs is for the leadership team in charge of overseeing the functions of Commercial Operations. The second major group of costs for Administrative Services is for various software licensing fees. This software is used for cost reconstruction and communication with the SPP.

Commercial Operations Application and Project Support (CAPS) – $195,504

Q. PLEASE DESCRIBE THE SERVICES PROVIDED TO SWEPCO BY THE CAPS DEPARTMENT.

A. These employees are responsible for the development, enhancement, maintenance, support, and installation of software tools used to efficiently and effectively dispatch generation resources and make purchases and sales for the benefit of native load customers, including SWEPCO's Texas retail customers. These employees are also responsible for partnering with the AEPSC Information Technology (IT) Group for the design, development, support, and installation of the specific software and equipment needed for the efficient and economical dispatch of the AEP Operating Companies' generating units and the purchases and sales transactions of electric energy on the wholesale markets.

Energy Marketing and Renewables - $103,489

Q. PLEASE DESCRIBE THE ENERGY MARKETING AND RENEWABLES DEPARTMENT.

A. This department provides two primary services to SWEPCO. It engages in mid-to-long-term structured deals for customers who are looking for specialized contracts that are not available in the traditional over-the-counter market. Such deals often entail some combination of the supply of load-following energy, capacity requirements, and the scheduling and coordinating with the appropriate RTO. Additionally, they engage in the procurement and management of long-term renewable purchase power contracts.

Q. PLEASE DESCRIBE THE SERVICES PROVIDED TO SWEPCO BY ENERGY MARKETING AND RENEWABLES.

A. Energy Marketing and Renewables personnel manage the request for proposals (RFP) process to procure energy and/or capacity on SWEPCO's behalf. Activities that facilitate the RFP process include structuring and issuing the RFP, reviewing and responding to questions posed by potential bidders, evaluating proposals, negotiating contract terms with "short-listed" bidders, and selecting the winning proposal. A joint procurement process for SWEPCO/Public Service Company of Oklahoma (PSO) has been used for the benefit of both companies. SWEPCO and PSO operate under the same planning timeline and their combined larger volume of capacity and/or energy purchases encourages a greater number of market participants to respond.

The Energy Marketing and Renewables group also engages in mid-to-long-term structured deals for customers who are looking for specialized contracts that are not available in the traditional over-the-counter market. The most common type of these structured deals are done for larger customers looking for a contract to supply their full load requirements.

V. NECESSITY AND REASONABLENESS OF COSTS

Q. PLEASE EXPLAIN WHY THE SERVICES PROVIDED BY THE COMMERCIAL OPERATIONS GROUP ARE REASONABLE AND NECESSARY TO SUPPORT SWEPCO'S PROVISION OF RELIABLE UTILITY SERVICE.

A. The reliable and economic dispatch of SWEPCO's generating units, the real-time monitoring of its generation and load, and the arranging for economic purchases and sales of electric energy in the wholesale markets are functions that need to be performed if native load customers, such as SWEPCO's Texas retail customers, are to receive reliable electric service at the lowest reasonable cost. The AEP West Operating Agreement and the SIA designate AEPSC as the agent to provide the dispatch, marketing, and settlement functions for SWEPCO and other AEP Operating Companies. This designation recognizes the economies of scale that are achieved when one central organization provides such services rather than the service being duplicated at each of the AEP integrated utility Operating Companies.

With the launch of the SPP IM in March 2014, the responsibilities and services provided by the Commercial Operations Group have increased in complexity and importance. These services are critical to optimize SWEPCO's participation in the SPP IM and are reasonable and necessary to support the provision of reliable utility service.

Q. HAS THE LAUNCH OF THE SPP IM REDUCED THE QUANTITY OF CONTROL CENTER SERVICES NEEDED TO PROVIDE RELIABLE AND ECONOMIC ELECTRIC SERVICE TO SWEPCO'S CUSTOMERS?

A. No, it has not. The launch of the SPP IM created additional responsibilities, products, communication, and coordination requirements between AEPSC, as agent for SWEPCO, and SPP.

Q. WHAT ARE SOME OF THE BENEFITS OF PROVIDING THE COMMERCIAL OPERATIONS SERVICES DESCRIBED ABOVE IN THIS CENTRALIZED MANNER?

A. Providing Commercial Operations services to SWEPCO through a centralized control center is consistent with the purpose of the West Operating Agreement and the SIA and has many significant operational and financial benefits. The centralized nature of the services Commercial Operations provides SWEPCO results in significant benefits from combining and leveraging the knowledge of the various personnel in Commercial Operations. Leveraging that knowledge directly benefits customers through lower fuel costs, higher off-system sales (OSS) margins, and overall increased reliability and operating performance. Examples include:

(1) Commercial Operations weather forecasting service

- Leads to improved operational planning due to more accurate anticipation of negative weather events
- Enhances the optimization of the system leading to lower fuel costs
- Would be much more expensive if it was replicated at each Operating Company

(2) Commercial Operations Production Optimization group

- Emphasizes safety and helps ensure that the reliability of the system and the prudent operation of the plants is a priority
- Provides a unique combination of knowledge and experience that would be extremely costly and difficult to replicate at each Operating Company

(3) The coordinated participation in the SPP IM demonstrates the value in leveraging the knowledge of all areas of Commercial Operations in order to directly benefit SWEPCO customers

Centralized Commercial Operations avoids costly duplication of the physical infrastructure and IT systems that are required. It also saves labor costs from current efficiencies. For example, through cross-training, AEP's pool of dispatchers can back each other up more efficiently (i.e., with a fewer number of dispatchers) than if each Operating Company operated its own control center. The reproduction of many personnel and areas of detailed knowledge would be expensive to duplicate on an Operating Company by Operating Company basis. In addition, much of the knowledge gained from Commercial Operations centralized structure could not be duplicated at the Operating Company level. In short, centralizing this function reduces costs and is beneficial.

Q. FROM A HIGH LEVEL, CAN YOU PLEASE EXPLAIN SOME OF THE WAYS IN WHICH COMMERCIAL OPERATIONS ACTIVELY ENGAGES IN THE MARKET IN ORDER TO OPTIMIZE THE RESULTS FOR SWEPCO'S CUSTOMERS?

A. AEPSC, on behalf of SWEPCO, optimizes the value of SWEPCO generation by participating in both the energy markets and the operating reserve markets. When preparing bids, coordinating unit status, and determining which units, and under what parameters, to offer to the market, AEPSC bases its economic decisions in light of the total revenue expected. For example, in certain instances the variable cost of the unit may be higher than the expected clearing price for energy. However, when the expected

revenue from selling one or more ancillary services is considered, the loss from the sale of energy may be more than offset by the revenue earned from the ancillary service sale.

Q. PLEASE DESCRIBE HOW COMMERCIAL OPERATIONS OPTIMIZES SWEPCO'S GENERATION IN THE MEDIUM TERM (2 DAYS – 2 WEEKS AHEAD).

A. The SPP IM Day-Ahead market is designed to determine the least-cost solution to meet the Energy Bids and Reserve requirements for the entire SPP footprint. Commercial Operations, on behalf of SWEPCO, is able to provide additional benefits in the form of lower purchased power cost used to serve customers and in capturing additional opportunities for off-system sales margins by extending its analysis of a unit's economic operation over a period of at least six days. The projected economics of SWEPCO's generation over this longer period of time allows SWEPCO's units to be used in a more efficient manner.

Q. WHAT TYPE OF BUDGETING PROCESS IS EMPLOYED WITH REGARD TO COMMERCIAL OPERATIONS PROJECTED EXPENSES?

A. The annual budget is based on those expenses over which Commercial Operations has direct control – i.e., the operations and maintenance (O&M) expenses. Managers prepare their budgets based on a comprehensive review of the specific job requirements of their group and these evaluations are translated into formal budgets.

Once budgets are in place, managers are given a monthly variance report that shows the budgeted amount versus the actual expenses incurred. Bi-weekly time entries

are also reviewed by management, which provides an additional check on employee expense allocations.

2017		2018		2019		Test Year	
Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
$18,442,663	$17,917,054	$18,163,038	$17,946,708	$17,274,561	$17,341,381	$16,745,747	$16,136,998

Q. WHAT WERE THE CHARGES TO SWEPCO BY THE AEPSC COMMERCIAL OPERATIONS GROUP DURING THE PREVIOUS THREE YEARS?

A. The table below illustrates the charges to SWEPCO during the previous three years and the test year:

Commercial Operations					
Services Billed to SWEPCO During the Test Year					
	Previous Test Year	2017	2018	2019	Adjusted Test Year
Total Commercial Operations	$4,045,403	$3,815,716	$3,904,658	$3,813,347	$3,555,269

Q. PLEASE EXPLAIN THE TREND IN COSTS CHARGED TO SWEPCO BY THE AEPSC COMMERCIAL OPERATIONS GROUP.

A. SWEPCO's total costs from the Commercial Operations department have trended downward since the time of SWEPCO's previous base rate case, with a decrease of approximately 12% over this period.

Q. WHAT ARE THE STAFFING TRENDS FOR THE LAST THREE YEARS FOR THE COMMERCIAL OPERATIONS ORGANIZATION?

A. The annual staffing counts represent the average number of employees reporting to the AEPSC Commercial Operations organization. Consistent with the decrease in the cost of the Commercial Operations department discussed above, the average number of

employees in the Commercial Operations organization shows a decline over the previous several years.

Commercial Operations	2017 Count	2018 Count	2019 Count	2020 Count*
Average Number of Employees	118	114	97	96
*as of March 31, 2020				

Q. IS THERE ANY DUPLICATION OF SERVICES PROVIDED BY THE COMMERCIAL OPERATIONS ORGANIZATION?

A. No, there are no overlapping services provided by AEPSC Commercial Operations performed by SWEPCO. In fulfilling its role as agent under the West Operating Agreement and the SIA, AEPSC Commercial Operations carries out the obligation to provide coordinated dispatch and related services to all AEP Operating Companies.

Q. HOW DOES SWEPCO PROVIDE INPUT AND DIRECTION TO THE AEPSC COMMERCIAL OPERATIONS ORGANIZATION?

A. SWEPCO has several avenues to provide input and direction to the AEPSC Commercial Operations group. SWEPCO can provide input through the Executive Committee, as provided for in the West Operating Agreement and the SIA. The Commercial Operations Director, Energy Marketing, provides SWEPCO another forum to provide input relating to short- and long-term capacity needs. In addition, the structure of the Day-Ahead RTO Operations group keeps SWEPCO generation personnel in daily communication with Commercial Operations.

Q. HOW CAN THE PERFORMANCE OF THE COMMERCIAL OPERATIONS GROUP BE EVALUATED?

A. Fuel cost is one indicator of performance. The savings demonstrate the benefits provided to SWEPCO's customers through the coordinated control and dispatch of the

combined AEP System. Through participation in the SPP IM, SWEPCO is able to purchase energy below its marginal cost, or sell surplus energy above its marginal cost and have access to a larger portfolio of generation and off-system markets. These transactions result in the reduction of fuel and purchased power expenses to the benefit of SWEPCO customers. Additionally, SWEPCO customers benefit from the OSS margins that are produced by AEPSC's Commercial Operations Group. During the above-mentioned test year, SWEPCO's total company OSS margins were $10,406,400, the Texas jurisdictional amount of which is allocated 90% to the customer, with the Company retaining 10%.

VI. SWEPCO CAPACITY PURCHASES

Q. PLEASE EXPLAIN THE CAPACITY REQUIREMENTS OF SPP AND HOW THEY IMPACT SWEPCO.

A. The SPP Planning Criteria provides for the sharing of reserve generating capacity as a means of reducing capacity requirements of each Member and providing reliable electric service to firm customers due to the equitable purchase, sale and exchange of generating capacity among Members. Reserves are used to cover contingencies such as unit forced outages and higher-than-expected load. Per SPP Planning Criteria 4, the Minimum Capacity Margin requirement is 12 percent. Under Criteria 4, SWEPCO is required to own or purchase sufficient generating capacity resources to meet its forecasted peak load requirement plus a minimum Capacity Margin of 12 percent, which translates into minimum required reserves of approximately 650 Megawatt (MW) for SWEPCO.

Q. PLEASE EXPLAIN HOW SWEPCO DETERMINES THE AMOUNT OF MARKET CAPACITY PURCHASES NECESSARY TO MEET ITS CAPACITY OBLIGATIONS.

A. There are many factors that influence the resource needs of SWEPCO. These include: forecasted load, generating resource additions and/or changes in unit ratings, SPP Capacity Margin requirements, the availability of firm transmission, and existing capacity purchase contracts. AEPSC prepares Capability, Demand, and Reserves forecasts for SWEPCO and acts as agent for SWEPCO in securing capacity purchase contracts from market resources when needed.

Q. IS SWEPCO SEEKING RECOVERY OF ANY LONG-TERM PURCHASED CAPACITY COSTS?

A. Yes. During the test year SWEPCO continued to purchase 50 MW of capacity under its long-term purchase power agreement (PPA) with Louisiana Generating Company (initially executed with Cajun Electric Power Cooperative). This agreement, which began in 1992, currently extends through the end of calendar year 2026. Since SWEPCO does not recover any portion of these capacity costs through the fuel clause, SWEPCO is seeking recovery of these reasonable and necessary purchased capacity costs through base rates.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

EXECUTIVE SUMMARY OF AMY E. JEFFRIES

Amy E. Jeffries, Manager – Coal Procurement for American Electric Power Service Corporation (AEPSC), is responsible for the coal procurement and inventory management activities for the regulated portion of the American Electric Power Company, Inc. (AEP) system, which includes Southwestern Electric Power Company (SWEPCO).

Ms. Jeffries' testimony demonstrates the reasonableness of SWEPCO's coal, lignite, and fuel oil inventory levels, discusses the fuel procurement and administrative activities associated with AEPSC's Fuel Procurement section, which procures fuel and related transportation for SWEPCO's generation fleet, and demonstrates that the costs associated with these activities are reasonable and necessary for the provision of fuel.

Ms. Jeffries' testimony explains that SWEPCO's generating fleet includes seven plants with natural gas as the primary fuel, three plants with coal as the primary fuel, and two plants with lignite as the primary fuel. She also clarifies the requirements for fuel oil at certain plants either as a backup fuel for generation or for use in ignition and flame stabilization. Ms. Jeffries' testimony supports SWEPCO's proposed fuel inventory levels to be included in the base rates in this proceeding.

Ms. Jeffries states that the Fuel Procurement section of the AEPSC Regulated Commercial Operations organization performs fuel procurement, contract negotiation, fuel scheduling/delivery, and inventory management services to provide a reliable supply of fuel at a reasonable delivered cost. The fuel-related contract administration functions are performed by a team within AEPSC's Commercial Risk Organization. AEPSC, through the Commercial Risk Organization, acts as agent for the AEP operating companies in performing these services. Ms. Jeffries confirms that centralizing Fuel Procurement functions within

AEPSC provides lower-priced fuels than would normally be available to one operating company because of AEPSC's volume purchasing power, market awareness, scale and scope of operations, and participation in system-wide solicitations.

SWEPCO's adjusted test-year fuel procurement charges are $309,794. Ms. Jeffries confirms that the AEPSC Fuel Procurement costs are reasonable and necessary to obtain fuel at a reasonable delivered cost, which is an essential component of SWEPCO's provision of reliable and economic electric service.

PUBLIC UTILITY COMMISSION OF TEXAS

APPLICATION OF

SOUTHWESTERN ELECTRIC POWER COMPANY

FOR AUTHORITY TO CHANGE RATES

DIRECT TESTIMONY OF

AMY E. JEFFRIES

FOR

SOUTHWESTERN ELECTRIC POWER COMPANY

OCTOBER 2020

2045

TESTIMONY INDEX

EXHIBITS

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.

A. My name is Amy E. Jeffries, and I am employed by American Electric Power Service Corporation (AEPSC), a subsidiary of American Electric Power Company, Inc. (AEP), in the regulated Commercial Operations organization as Manager – Coal Procurement. My business address is 1 Riverside Plaza, Columbus, Ohio 43215.

Q. WHAT ARE YOUR PRINCIPAL AREAS OF RESPONSIBILITY AS MANAGER - COAL PROCUREMENT?

A. I am responsible for managing coal procurement, contract oversight, and inventory management activities for the following AEP operating companies: Southwestern Electric Power Company (SWEPCO or the Company), Appalachian Power Company (APCo), Wheeling Power Company (WPCo), Kentucky Power Company (KPCo), Indiana & Michigan Power Company, Public Service Company of Oklahoma (PSO) and as agent for Ohio Valley Electric Corporation and Indiana Kentucky Electric Corporation.

Q. PLEASE GIVE A BRIEF DESCRIPTION OF YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.

A. I earned a Master of Business Administration from The Ohio State University in 2000 and a Bachelor of Science in Business Administration with a major in Procurement and Materials Management from Bowling Green State University in 1993.

My professional background in energy began in 1998 as an Account Manager at Clinton Energy Management Services, a natural gas marketing company. In 2000, I joined AEPSC in a rotational program before obtaining the role of Fuel Procurement

Coordinator with responsibilities for the procurement of coal for a number of coal-fired power plants. I transferred to the role of Energy Trader in 2004, with responsibilities for optimizing emission allowance credits and renewable energy credits. In 2010, I was promoted to Manager – Structuring, in which I provided analytical support for the Fuel, Emissions and Logistics (FEL) group. In January 2014, with the consolidation of the FEL organization and the Commercial Operations organization to become the Regulated Commercial Operations organization, I was promoted to Manager Natural Gas Procurement. I was promoted to my current position in May 2018.

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY BEFORE THIS COMMISSION OR OTHER COMMISSIONS?

A. Yes. I have submitted written testimony to the Public Utility Commission of Texas in Docket Nos. 47553 and 50997 and the Louisiana Public Service Commission on behalf of SWEPCO. Additionally, I have submitted written testimony to the Virginia State Corporation Commission on behalf of APCo and testified before the Public Service Commission of West Virginia on behalf of APCo and WPCo. I have also testified before the Kentucky Public Service Commission on behalf of KPCo and the Oklahoma Corporation Commission on behalf of PSO.

II. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. I will demonstrate the reasonableness of SWEPCO's coal, lignite, and fuel oil inventory levels. These inventory levels were supplied to Company witness Michael

A. Baird, who relied on these levels to calculate certain adjustments for inclusion in rate base. Additionally, I discuss the fuel procurement and administrative activities associated with AEPSC's Fuel Procurement section, which procures fuel and related transportation for SWEPCO's generation fleet, and demonstrate that the costs associated with these activities are reasonable and necessary for the provision of fuel.

Q. WHAT SCHEDULES DO YOU SPONSOR OR CO-SPONSOR IN THIS FILING?

A. I am sponsoring or co-sponsoring the following schedules from the Commission's Rate Filing Package.

Schedule	Description	Co-Sponsor(s)
E-2.1	Fossil Fuel Inventory Policies	None
E-2.2(HS)	Fossil Fuel Inventory Evaluation	None
E-2.3(HS)	Fossil Fuel Inventories	None
E-2.4(HS)	Fossil Fuel Inventory Levels	None
E-2.5	Fossil Fuel Inventory Values	None
I-4	Fuel and Fuel Related Contracts	None
I-8	Fuel Properties	None
I-9	Employee Organizational Charts	None
I-10	Employee Ethics	Mertz
I-13	Ethics - Relationship with Fuel Supplier	None
I-14	Fuel Audits	None
I-17.1	Coal Cost Breakdown - Monthly	None
I-17.2	Lignite Cost Breakdown - Monthly	None
I-17.3	Coal Cost Description	None

I-18	Coal and Lignite Supplier Locations	None
I-19.6	Rail Car Maintenance	None
I-20	Fuel Management Travel	None
I-21	Fuel Management	None

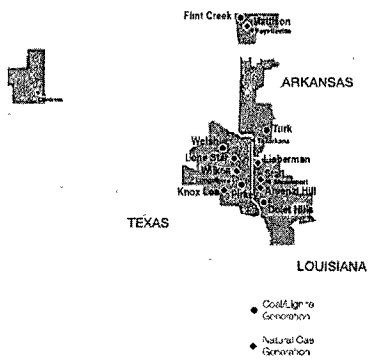
III. GENERATING PLANTS

Q. WHICH PLANTS ARE INCLUDED IN SWEPCO'S GENERATING FLEET?

A. As shown in Figure 1 below, as of March 31, 2020, SWEPCO's generating fleet is comprised of twelve plants, which provide 5,162 MW of capacity. These include seven plants with natural gas as the primary fuel, three plants with coal as the primary fuel, and two plants with lignite as the primary fuel. Also, the location and capacity of each unit is noted, and a map is provided with the plants identified.

Figure 1: SWEPCO's Generating Fleet (As of 3/31/2020)

PLANT	LOCATION	PLANT CAPACITY (MW)	SWEPCO CAPACITY (MW)	PRIMARY FUEL
John W. Turk, Jr.	Fulton, AR	650	477	Coal
Flint Creek	Gentry, AR	516	258	Coal
Welsh	Cason, TX	1,053	1,053	Coal
Dolet Hills (operated by CLECO Corp.)	Mansfield, LA	638	257	Lignite
Pirkey	Hallsville, TX	675	580	Lignite
Mattison	Tontitown, AR	315	315	Natural Gas
Stall Unit	Shreveport, LA	534	534	Natural Gas
Lieberman	Mooringsport, LA	242	242	Natural Gas
Arsenal Hill	Shreveport, LA	110	110	Natural Gas
Wilkes	Avinger, TX	889	889	Natural Gas
Knox Lee	Longview, TX	397	397	Natural Gas
Lone Star	Lone Star, TX	50	50	Natural Gas



TOTAL	6069	5162	

A. Natural Gas Plants

Q. PLEASE DESCRIBE SWEPCO'S NATURAL GAS PLANTS.

A. SWEPCO owns and operates seven natural gas power plants that provide a total of 2,537 MW of capacity and are connected to the natural gas pipeline systems shown on EXHIBIT AEJ-1. These plants and their production capacity are as follows: Arsenal Hill (110 MW), Knox Lee (397 MW from Units 2, 3, and 5; Unit 4 was retired in January 2019; Units 2 and 3 were retired in May 2020), Lieberman (242 MW from Units 2, 3, and 4; Unit 2 was retired in May 2020), Lone Star (50 MW; retired in May 2020), Mattison (315 MW from Units 1, 2, 3, and 4), Stall (534 MW from Unit 6), and Wilkes (889 MW from Units 1, 2, and 3). The Wilkes natural gas plant can also utilize fuel oil to generate electricity, and the Company maintains a limited quantity of fuel oil at the plant as an emergency back-up fuel supply. SWEPCO also uses natural gas for ignition and flame stabilization at its Pirkey and Dolet Hills lignite power plants and at its Turk coal power plant.

Q. DESCRIBE THE ACCESS SWEPCO PLANTS HAVE TO NATURAL GAS PIPELINES.

A. As shown on EXHIBIT AEJ-1, each of SWEPCO's natural gas power plants has access to at least one pipeline system, and four of the plants have multiple pipeline connections. These multiple natural gas pipeline connections provide the Company with even greater access to reliable, flexible, and competitively-priced natural gas supplies. Through its transportation agreements with the various pipeline companies,

the Company has access to multiple suppliers to ensure reliability and diversity of supply. Provisions in certain transportation agreements provide for hourly and daily swings in natural gas supply.

Q. PLEASE DESCRIBE SWEPCO'S NATURAL GAS ACQUISITION PRACTICES.

A. Due to fluctuating natural gas requirements associated with the variable operation of its natural gas power plants, SWEPCO requires flexibility in its natural gas supply and transportation arrangements. Natural gas volumes needed by SWEPCO to match customer demand require instantaneous, hourly, and daily flexibility in the delivery flow. To meet these needs, SWEPCO relied predominantly on daily spot[1] market natural gas purchases, but it also used longer-term arrangements including monthly baseload[2] and long-term firm[3] purchases.

Also, as a function of SWEPCO's natural gas units in the Southwest Power Pool Integrated Marketplace (SPP IM) operations, SWEPCO is often required to purchase natural gas in "after-market" conditions (known as "intra-day" purchases) following the close of the timely day-ahead market.

SWEPCO's natural gas generating units operated in a variable manner, which resulted in SWEPCO's natural gas purchase requirements being variable. Therefore,

[1] A "daily spot" transaction usually has a term of one day (but can be up to five days due to weekends and holidays) and can be purchased the trading day before gas is needed, or on the same day. Spot supplies are subject to the market price and availability at the time of the transaction with either fixed or index-based prices.

[2] A "monthly baseload" natural gas supply arrangement has a term of one month under which the supplier commits to provide SWEPCO with a specific volume on a firm basis at a price pursuant to a predetermined pricing mechanism.

[3] A "long-term firm" natural gas supply arrangement is a natural gas supply arrangement having a term of one year or more under which the supplier commits to provide SWEPCO with a specific volume of natural gas on a firm basis at a price pursuant to a predetermined pricing mechanism.

SWEPCO required flexibility in its natural gas supply and transportation arrangements.

SWEPCO utilized firm, secondary firm (an option under certain firm agreements that list secondary receipt and delivery points, which can be used for service and is second only to firm in reliability), and interruptible natural gas transportation agreements. Interruptible transportation is less expensive, but it is also less reliable than firm transportation service. With a firm transportation agreement, there is decreased risk of plant curtailment due to lack of transportation capacity. SWEPCO enters into firm transportation arrangements when a SWEPCO plant is critical to maintaining the reliability of SWEPCO's electric power and transmission system, operate at a high capacity factor, and/or when swing capability[4] is critical to meeting peaking requirements. Relying solely on interruptible natural gas transportation increases the risk to the plants' operation.

The natural gas supply and transportation arrangements utilized by SWEPCO provided the required flexibility necessary to reliably operate SWEPCO's system while minimizing overall total fuel costs.

Q. PLEASE DESCRIBE THE SUPPLY OF NATURAL GAS TO THE PIRKEY AND DOLET HILLS LIGNITE POWER PLANTS AND TO THE TURK COAL POWER PLANT.

[4] Swing capability is the ability to vary the instantaneous, hourly or daily natural gas flow rates on an as needed basis rather than being restricted to a steady flow rate. Swing capability is critical to match the varying gas generation demands and is a service normally obtained under firm natural gas transportation arrangements. However, interruptible transportation agreements or delivered supply from intrastate pipelines may also provide swing capability subject to the operating pipeline's discretion.

A. Natural gas provides for ignition and/or flame stabilization at the Company's lignite power plants—Pirkey and Dolet Hills— and the Turk coal power plant. Through December 15, 2019, ignition fuel for the Pirkey power plant was purchased from various suppliers and transported on the Gulf South Pipeline Company (Gulf South) transportation contract. Effective December 16, 2019, Tristate RTX, LLC (Tristate) acquired certain FERC regulated pipelines in Texas and Louisiana from Gulf South, which includes the pipeline that supplies natural gas to the Pirkey power plant. SWEPCO entered into a firm, no-notice transportation agreement with Tristate, and a firm no-notice gas supply agreement with Midcoast Pipelines (East Texas) L.P., to ensure that ignition fuel is available when it is required.

SWEPCO is a joint-owner of the Dolet Hills Power Station Plant, located near Mansfield, Louisiana, which is outside SWEPCO's service territory and is operated by CLECO Power (CLECO). CLECO is responsible for the ignition fuel supply at Dolet Hills. SWEPCO, however, has contract oversight in conjunction with CLECO through its position on the Dolet Hills Lignite Project Executive Committee. CLECO has an agreement with Enlink (formerly known as Crosstex Gulf Coast Marketing) to provide natural gas to the Dolet Hills Power Station Plant.

Ignition fuel for the Turk coal power plant is purchased from various suppliers and transported on the Natural Gas Pipeline Company (NGPL) transportation contract.

B. Coal Plants

Q. PLEASE DESCRIBE SWEPCO'S COAL POWER PLANTS.

A. SWEPCO owns 100 percent of the Welsh power plant, comprised of two units (Units 1 and 3) for a total of 1053 MW of capacity, and 50 percent (258 MW) of the Flint Creek Power Plant, a single 516 MW unit. The Arkansas Electric Cooperative Corporation owns the other 50 percent of the Flint Creek Power Plant, and SWEPCO operates the plant for the benefit of both co-owners. In addition, SWEPCO owns 73.333 percent (477 MW) of the Turk plant, a 650 MW plant which SWEPCO operates for the benefit of its co-owners. These three coal plants are fueled by sub-bituminous coal from the Powder River Basin (PRB) of Wyoming with a typical heat content of 8,400 to 8,800 British thermal units (Btu) per pound.

Q. PLEASE DESCRIBE SWEPCO'S COAL PURCHASING STRATEGY AND ACQUISITION PRACTICES.

A. PRB coal is procured on behalf of SWEPCO and shipped by rail to Welsh, Flint Creek, and Turk. Typically, as open positions of coal are identified for each plant in advance of the coming year(s), the various tonnage and quality needs are competitively solicited from potential suppliers specifying the quality, quantity, and logistical parameters sought for each plant. From offers received, a selection is made of the coal needed to meet SWEPCO's requirements, based on a reasonable delivered cost, including the consideration of price, coal quality, ability to deliver, past performance, and the financial status of suppliers. This practice lowers the risk and enhances the Company's security of supply. Additionally, when attempting to procure reliable supplies of coal at reasonable prices, the Company evaluates unsolicited bids, monitors coal markets for availability and price, and considers coal supplies from the Over the Counter (OTC) market.

To determine the quantity of coal needed, SWEPCO first ascertains the amount of coal contracted under the terms of its coal supply agreements. The Company then compares that amount to the forecasted coal burn for the year and targeted inventory level at each SWEPCO plant to determine the open, uncommitted position. This open position represents the tonnage that SWEPCO could seek from other available sources, primarily in the spot market, and is evaluated on a continuing basis because projected consumption and inventory may differ as values are updated with actual results.

AEPSC, as agent for SWEPCO, continually monitors coal markets and suppliers to stay abreast of spot coal market conditions and transactions. Similar to long-term supply purchases, spot coal purchases can be made through competitive bid solicitations or through OTC transactions. OTC transactions, as reported in industry publications such as "Argus *Coal Daily*" and "Platts *Coal Trader*" are monitored for both 8,400 and 8,800 Btu quality coal, which is the quality range used by SWEPCO's coal plants. While OTC transactions are generally for non-recurring, limited tonnage transactions having very general coal qualities, such transactions can provide a sense of current market price trends for the specific coals required for SWEPCO's coal plants. In addition, AEPSC interacts with industry coal traders regarding spot market trends.

Q. PLEASE DESCRIBE HOW THE PROCURED COAL IS DELIVERED TO THE WELSH, FLINT CREEK, AND TURK PLANTS.

A. Shipments of PRB coal to Welsh and Flint Creek plants are transported from the coal mines in the PRB to Kansas City via the Union Pacific Railroad (UP), and are then

taken from Kansas City to SWEPCO's Welsh and Flint Creek plants by the Kansas City Southern Railway Company. Shipments of PRB coal to the Turk plant are transported directly from the coal mines in the PRB to the Turk plant by the UP. Refer to Schedule I-18 for the applicable coal supplier locations.

C. Lignite Plants

Q. PLEASE DESCRIBE SWEPCO'S LIGNITE POWER PLANTS.

A. SWEPCO's Pirkey plant, located west of Marshall, Texas, is a 675 MW lignite generating unit that is jointly-owned by SWEPCO, Northeast Texas Electric Cooperative, Inc. (NTEC) and Oklahoma Municipal Power Authority (OMPA). SWEPCO's ownership interest is approximately 580 MW, or 85.936 percent. The Dolet Hills Power Station, located southeast of Mansfield, Louisiana, is a 638 MW lignite-fueled generating unit that is jointly owned by CLECO, SWEPCO, NTEC and OMPA. The unit is operated by CLECO with SWEPCO's ownership interest being approximately 257 MW, or 40.234 percent.

Q. PLEASE DESCRIBE SWEPCO'S LIGNITE ACQUISITION PRACTICES.

A. SWEPCO's objective is to secure a reliable supply of lignite for the Pirkey and Dolet Hills plants to produce power for SWEPCO's customers at the lowest reasonable cost. SWEPCO meets its lignite needs for the Pirkey plant with deliveries from lignite reserves it owns or leases. These reserves are located near the plant and are mined for SWEPCO by the Sabine Mining Company, a subsidiary of the North American Coal Corporation. At Dolet Hills, SWEPCO works with CLECO, the plant operator, to accommodate the efficient mining of lignite reserves located near the plant. Lignite is provided to the Dolet Hills plant from nearby lignite reserves mined by the Dolet

Hills Lignite Company (DHLC), a wholly-owned subsidiary of SWEPCO, which provides lignite at the same price to all co-owners. Refer to Schedule I-18 for a description of lignite supplier locations and Schedule I-17.2 for a lignite cost breakdown.

D. Fuel Oil Plants

Q. WHICH OF SWEPCO'S POWER PLANTS USE FUEL OIL?

A. Wilkes Power Plant Unit 1 uses No. 2 fuel oil as a backup fuel source in the event of natural gas supply disruptions. Wilkes Unit 1 is capable of burning both No. 2 or No. 4 fuel oil, but No. 4 fuel oil inventory is not maintained at the Wilkes plant due to the lack of nearby availability making it an uneconomic and unreliable option. Also, pursuant to a Texas Air Control Board permit, Wilkes Unit 1 is allowed to burn non-polychlorinated biphenyl (non-PCB) waste transformer oil containing less than 50 parts per million of PCBs. This waste transformer oil from Company equipment has been added to a dedicated storage tank at Wilkes as necessary. No. 2 fuel oil is also utilized at the Welsh and Flint Creek plants as ignition and flame stabilization fuel, and the Company maintains No. 2 fuel oil supplies at these plants to assure adequate supply to support continued operations. In early 2019, it was determined that fuel oil would no longer be used as a substitute fuel at the Knox Lee and Lieberman plants, and the Company made arrangements to transfer the fuel from those plants to the Welsh plant.

Q. PLEASE DESCRIBE SWEPCO'S FUEL OIL ACQUISITION PRACTICES.

A. SWEPCO purchases its fuel oil supplies through a competitive bidding process. Since fuel oil is not utilized as a primary fuel supply at any of its power plants, SWEPCO

purchases the fuel oil requirements for its plants utilizing spot blanket purchase orders that have no contract minimums. As existing purchase orders approached the end of their term, the Company requests written bids from its fuel oil suppliers through a competitive bidding process. The bids are then reviewed and the lowest cost bid with acceptable quality and delivery conditions is selected, and new purchase order(s) executed.

IV. PROPOSED INVENTORY IN RATE BASE

Q. FOR WHICH SWEPCO POWER PLANTS DO YOU ADDRESS INVENTORY LEVELS?

A. I support: (1) the coal inventory levels for the Welsh, Flint Creek, and Turk coal power plants; (2) the lignite inventory levels for the Pirkey and Dolet Hills power plants; and (3) the fuel oil inventory levels located at the Wilkes, Lieberman and Knox Lee gas-fired power plants and the Welsh and Flint Creek coal-fired power plants. SWEPCO does not carry an inventory of natural gas for any of its natural gas plants as it does not own any natural gas storage capacity or facilities. As stated above, arrangements were made to transfer the fuel oil inventory from Lieberman and Knox Lee to Welsh. These transfers to Welsh were completed in August of 2020.

A. Coal and Lignite Inventory

Q. WHAT IS THE PURPOSE OF MAINTAINING COAL AND LIGNITE INVENTORIES?

A. The purpose of maintaining solid fuel inventories is to assure a continuous supply of coal and lignite of the appropriate quality to all of AEP's solid-fuel generating

stations, delivered at a reasonable cost over a period of years so as to promote the generation of the lowest cost per kWh of electricity, within the constraints of safety, reliability of supply, unit design, and environmental requirements. Coal and lignite deliveries must be arranged so that sufficient fuel is available at all times to provide and maintain adequate and dependable electric service for SWEPCO's customers. The consistency and quality of the coal and lignite delivered to the generating stations is also vitally important. The consistency of the sulfur content of the PRB coal delivered to the Welsh, Flint Creek and Turk plants, and the lignite delivered to the Pirkey and Dolet Hills plants, is fundamental to SWEPCO in achieving and maintaining compliance with applicable environmental regulations. SWEPCO's inventory policies are further discussed in Schedule E-2.1.

Q. PLEASE DESCRIBE SOME OF THE FACTORS THAT INFLUENCE PLANNED COAL AND LIGNITE INVENTORY LEVELS.

A. The factors that influence planned inventory levels include the probability of interruptions of the fuel supply, how long such interruptions may last, and how much fuel is necessary to provide for these contingencies. AEPSC Fuel Procurement, Engineering, and SWEPCO power plant management groups review and set SWEPCO's coal and Pirkey's lignite inventory targets annually. Dolet Hills is operated under a partial ownership arrangement and CLECO manages the plant and sets the fuel inventory targets for Dolet Hills.

Q. WHAT CIRCUMSTANCES COULD RESULT IN SUPPLY DISRUPTIONS?

A. Supply disruptions may include the following circumstances: labor stoppages at mining operations or by transportation employees; mine production and permitting

difficulties; extreme weather events such as blizzards, hurricanes, and floods (which can affect both mines and all transportation modes); shortages of both mining and transportation equipment and supplies; outages affecting loading or unloading equipment; capacity constraints due to inadequate funding of mining and transportation infrastructure; and derailments that can result in significant and sometimes extended limitations on coal deliveries.

Q. ARE THERE OTHER CRITERIA THAT AEPSC CONSIDERS IN SETTING SOLID-FUEL INVENTORY TARGETS?

A. Yes, AEPSC also considers plant-specific criteria to help further refine the level of solid fuel inventory required at each plant. Of primary importance are the fuel transportation and unloading options that are available (such as truck, conveyor belt and/or rail); the number of third-party suppliers; and whether the plant has a high capacity factor (i.e., base loaded). Additional consideration is given to the diversion and back-up supply capabilities involving other plants in the AEP System; the burn variability that is forecasted for the plant; and the distance and lead time that is necessary to transport coal from the mine to the plant.

Q. HOW ARE ALL OF THESE FACTORS USED IN DETERMINING THE INVENTORY TARGETS FOR EACH POWER PLANT?

A. Target inventory levels are determined based on the number of days that the plant may be expected to operate using just the fuel inventory available at the plant site. A "days-burn" is defined as the number of tons that the plant would burn in one day at full load. Each plant is initially allocated a base level of inventory as expressed in

terms of a number of days-burn. Additions are made to this base amount in consideration of the criteria explained above.

Q. WHAT LEVEL OF SOLID FUEL INVENTORY DOES SWEPCO PROPOSE FOR INCLUSION IN RATE BASE IN THIS PROCEEDING?

A. SWEPCO proposes a 30-day level of coal inventory be included for the Welsh, Flint Creek, and Turk power plants, which represents 477,300 tons, 231,500 tons, and 224,200 tons, respectively. For lignite inventory, SWEPCO proposes a 30-day level of inventory for the Pirkey power plant and a 45-day level of lignite inventory for the Dolet Hills Power Station, which represents 337,652 tons and 233,898 tons, respectively. These lignite target tonnages are reported based on the SWEPCO ownership portion of each plant. The proposed coal targets remain the same as the target levels approved in the last base rate case. Please refer to Schedule E-2.2(HS) for further information regarding SWEPCO's inventory target levels and corresponding dollar values for its solid fuel power plants. These inventory levels were supplied to Company witness Michael A. Baird, who relied on these levels to calculate certain adjustments for inclusion in rate base.

B. Fuel Oil Inventory

Q. WHAT IS SWEPCO'S FUEL OIL INVENTORY POLICY?

A. SWEPCO'S policy is to maintain a limited supply of fuel oil inventory at Wilkes as a substitute for natural gas in the event of unavailability or curtailment due to extreme weather conditions or human needs requirements. This policy was previously applicable to the Knox Lee and Lieberman plants, but will not apply for 2020 and beyond. It is also SWEPCO's policy to maintain an inventory of fuel oil at Welsh and

Flint Creek for flame stabilization and ignition. Please refer to Schedule E-2.1 for further information regarding SWEPCO's fuel oil inventory target level and Schedule E-2.2(HS) for the thirteen month average dollar values at March 31, 2020. This fuel oil inventory level was supplied to Company witness Michael A. Baird, who relied on these levels to calculate certain adjustments for inclusion in rate base.

V. FUEL PROCUREMENT ORGANIZATION DESCRIPTION

Q. PLEASE DESCRIBE THE PURPOSE OF THE ORGANIZATION WITHIN AEPSC THAT PROCURES FUEL FOR SWEPCO AND ITS REGULATED AFFILIATES.

A. The Fuel Procurement section of the AEPSC Regulated Commercial Operations organization performs the following services to provide a reliable supply of fuel at a reasonable delivered cost: fuel procurement, contract negotiation, fuel scheduling/delivery and inventory management. The fuel-related contract administration functions are performed by a team within AEPSC's Commercial Risk Organization. AEPSC, through the Commercial Risk Organization, acts as agent for the AEP operating companies in performing these services. Regulated Commercial Operations executes and manages fuel supply and transportation agreements between the AEP operating companies and suppliers. The Fuel Procurement section, within the Regulated Commercial Operations organization, is led by the Vice President, Fuel Procurement who has overall responsibility for fuel procurement and transportation for all of AEP's regulated power plants, with the exception of lignite mining for the Pirkey and Dolet Hills plants.

Q. PLEASE PROVIDE A GENERAL DESCRIPTION OF THE FUEL PROCUREMENT SECTION.

A. The Fuel Procurement section, within the Regulated Commercial Operations organization, procures fuel and fuel related transportation services for SWEPCO and consists of four groups: (1) the Natural Gas and Fuel Oil Procurement group; (2) the Coal Procurement group; (3) the Coal Transportation and Logistics group (that manages coal transportation); and (4) the Reagents and Coal Combustion Products group (that procures Consumables). These groups are responsible for the planning, acquisition, and negotiation of the fuel supply and/or the related transportation agreements, as well as inventory management for their respective products for the SWEPCO plants. Refer to EXHIBIT AEJ-2 and Schedule I-9 for an organizational chart of the Fuel Procurement section. The procurement staff is required to perform its work consistent with corporate employee ethics and with the Federal Energy Regulatory Commission (refer to Schedules I-10 and I-13 for the applicable requirements).

VI. FUEL PROCUREMENT CHARGES AND BENEFITS TO SWEPCO

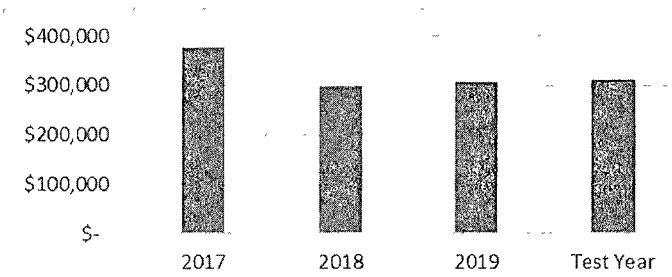
Q. WHAT WERE SWEPCO'S ADJUSTED TEST YEAR CHARGES FOR THE DESCRIBED FUEL PROCUREMENT SECTION?

A. SWEPCO's adjusted Test Year charges for fuel procurement were $309,794.

Q. WHAT HAS BEEN THE TREND IN FUEL PROCUREMENT COSTS CHARGED TO SWEPCO?

A. The Fuel Procurement costs charged to SWEPCO decreased in 2018 compared to 2017 and then modestly increased in 2019 and again during the Test Year. The Test Year ending March 31, 2020, reflects lower costs than those reported in the Test Year ended June 30, 2016, from SWEPCO's last base rate case, Docket No. 46449, which were $366,011. The reduction is primarily due to Commercial Operations re-organization efforts and staffing cuts, as well as from various process improvements within Fuel Procurement. The chart below (Figure 2) illustrates how these costs have changed.

Figure 2: Actual Historical Fuel Procurement Costs Billed to SWEPCO



Q. WHAT ARE THE STAFFING TRENDS BY YEAR FOR THE AEPSC FUEL PROCUREMENT ORGANIZATION?

A. The end of year staffing counts for the Fuel Procurement organization represent the total number of AEPSC employees in that group within Regulated Commercial Operations. That count is shown in Figure 3.

Figure 3: Fuel Procurement Employee Count

Group	2017	2018	2019	Test Year
Management	6	6	6	6
Staff	15	14	12	12

* Does not include the barge operations personnel, which were added to the organization in April 2016, as no barge services are provided to SWEPCO

Q. PLEASE DESCRIBE THE OVERALL FUEL PROCUREMENT BUDGET RESULTS FROM MARCH 2017 THROUGH THE TEST YEAR IN THE CURRENT BASE RATE CASE.

A. Figure 4 below shows the Fuel Procurement organization performed at about 35.9% over budget in 2017, 17.8% over budget in 2018, 2.27% under budget in 2019 and just under 1% over budget during the Test Year. However, during each of the years the budget dollars for Consumables (labor, outside services, etc.) were coded to a non-cost of service account and mismatched to how actual dollars were coded to a cost of service account. When allocating the Consumables budget dollars properly to the cost of service account, the Fuel Procurement organization in fact performed under budget in each year (5.6% in 2017, 18.4% in 2018, 30.2% in 2019 and 28.2% in the Test Year). The barging operations employees were not included in the employee count in Figure 3 or the budget results in Figure 4 as SWEPCO receives no barging services and such labor costs were accounted for separately from the Fuel Procurement section budget.

Figure 4: Fuel Procurement Budget Results

Year	Actuals	Budget	Variance	Budget w/Consumables	Variance
2017	$ 1,240,880	$ 913,285	$ 327,595	$ 1,315,052	$ (74,172)
2018	$ 1,104,680	$ 937,540	$ 167,140	$ 1,353,771	$ (249,091)
2019	$ 1,039,184	$ 1,063,270	$ (24,086)	$ 1,488,305	$ (449,121)
Test Year	$ 1,054,891	$ 1,044,724	$ 10,167	$ 1,469,737	$ (414,846)

Q. WHAT BENEFITS ARE PROVIDED BY AEPSC TO SWEPCO IN SECURING ITS FUEL SUPPLY?

A. The centralized Fuel Procurement function within AEPSC provides lower-priced fuels than would normally be available to one operating company as a result of

SWEPCO's access to AEPSC's volume purchasing power, market awareness, scale and scope of operations, and participation in system-wide solicitations. In addition, AEPSC's centralized Fuel Procurement organization provides services to SWEPCO and other AEP affiliates, as needed. In this manner, each company is charged only for the services that it needs. As a result, SWEPCO incurs a lower cost than if it had to maintain a full-time staff dedicated to work only on its fuel activities. In the Test Year ending on March 31, 2020, for example, SWEPCO paid just under $17,400 per employee for the benefit of an experienced, cross-functional organization to handle the procurement and transportation of fuel to all of SWEPCO's plants.

Q. ARE THESE SERVICES DUPLICATED AT SWEPCO?

A. No, they are not. The AEPSC organization maintains SWEPCO's only Fuel Procurement section.

Q. ARE THE AEPSC FUEL PROCUREMENT COSTS INCURRED BY SWEPCO REASONABLE AND NECESSARY?

A. Yes they are. Obtaining the necessary fuel, at the lowest reasonable delivered cost, is an essential component of SWEPCO's provision of reliable, economic electric service. The functions carried out by the Fuel Procurement section were necessary to meet those obligations. In particular, SWEPCO's ability to obtain the lowest reasonable delivered fuel cost was primarily attributable to the effective management of SWEPCO's fuel mix.

VII. CONCLUSION

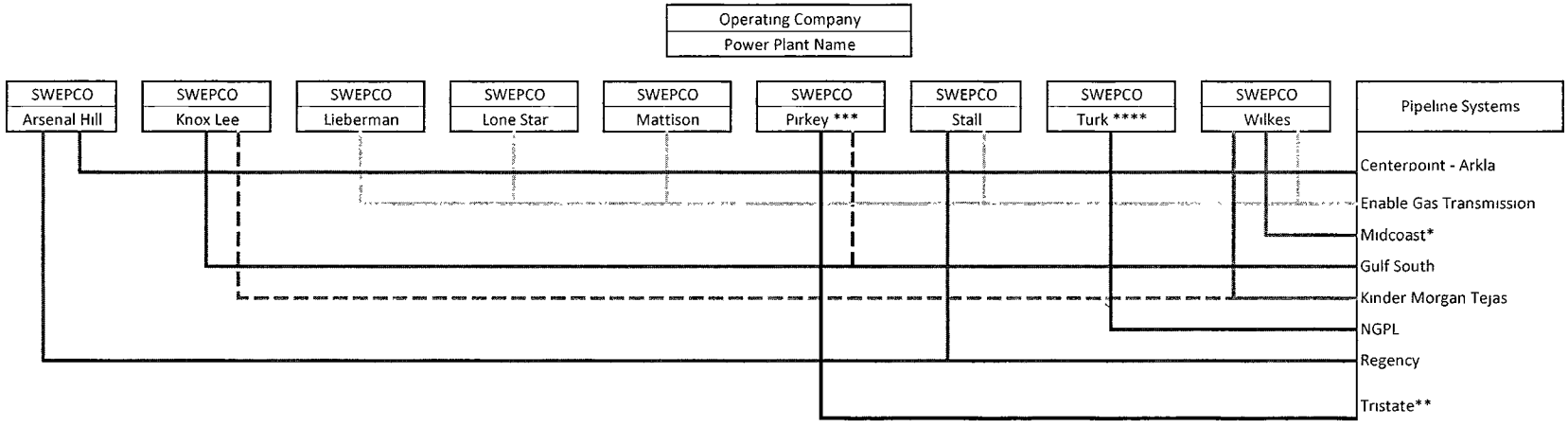
Q. IN SUMMARY, WHAT IS YOUR OPINION AS TO THE REASONABLENESS AND NECESSITY OF AEPSC'S FUEL PROCUREMENT CHARGES DURING THE TEST PERIOD?

A. AEPSC's Fuel Procurement organization performed necessary services to ensure reasonable cost for the reliable supply of fuel for SWEPCO's generating plants and charged SWEPCO reasonable and necessary costs for providing that service.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

Natural Gas Pipelines Connected to
American Electric Power - SWEPCO Power Plants
Gas Power Plants
Coal and Lignite Power Plants (use gas for start up and flame stabilization)



Solid lines indicate pipeline ownership/connectivity at the end of the reconcilaltion period
Dotted lines indicate pipelines that provided service during the reconciliation period, but are no longer applicable

** Midcoast purchased assets from Enbridge, effective August 1, 2018.*
*** Tristate purchased assets from Gulf South (including the section of pipe connected to Pirkey), effective December 16, 2019*
**** Pirkey is a lignite plant that uses natural gas only for start up and flame stabilization*
***** Turk is a coal plant that uses natural gas only for start up and flame stabilization*

EXHIBIT AEJ-1

AMERICAN ELECTRIC POWER

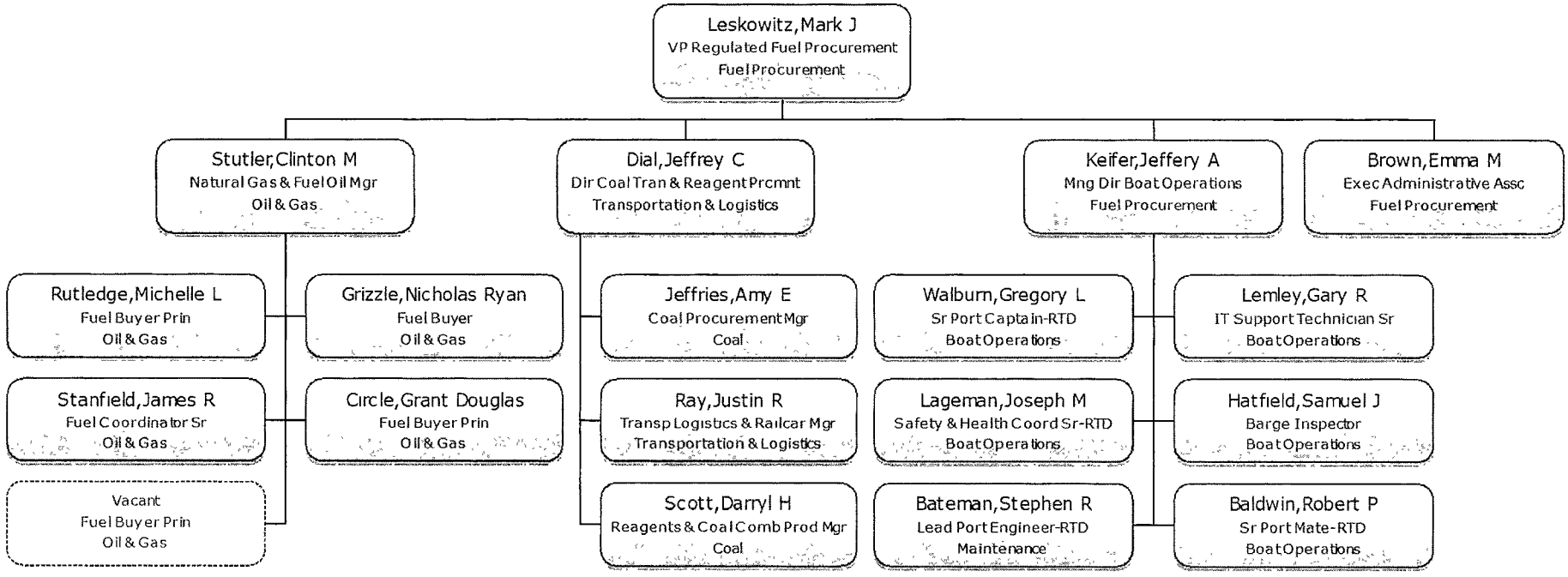


EXHIBIT AEJ-2

EXECUTIVE SUMMARY OF STEPHEN L. SWICK

Stephen L. Swick, Vice President and Chief Security Officer for American Electric Power Service Corporation (AEPSC), is responsible for the Enterprise Security Program for American Electric Power Company, Inc. (AEP) and all AEP affiliates, including SWEPCO. The Enterprise Security Program is focused on protecting employees, contractors, and visitors as well as all AEP assets.

Mr. Swick describes the AEP Security organization and provides an overview of AEP Security's staffing and services. In particular, he explains how AEP Security supports SWEPCO. Mr. Swick identifies the mission of the AEP Security team as protecting the people, information, and assets of AEP's utility operating companies and its customers' way of life by proactively making safety, compliance and reliability the driving factors in AEP's security programs.

Mr. Swick demonstrates the necessity of AEP Security services in support of SWEPCO's utility operations. Mr. Swick also presents the adjusted test year charges from AEP Security to SWEPCO and show that these costs are reasonable. In this connection, he explains the AEP Security trends in costs billed to SWEPCO. Mr. Swick also describes how AEP Security controls its costs through prudent budgeting, process improvement, use of outsourcing, and appropriate staffing levels.

The total test year costs billed to SWEPCO for AEP Security services are $1,181,971.

PUBLIC UTILITY COMMISSION OF TEXAS

APPLICATION OF

SOUTHWESTERN ELECRIC POWER COMPANY

FOR AUTHORITY TO CHANGE RATES

DIRECT TESTIMONY OF

STEPHEN L. SWICK

FOR

SOUTHWESTERN ELECTRIC POWER COMPANY

OCTOBER 2020

2072

TESTIMONY INDEX

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND POSITION.

A. My name is Steven L. Swick. My business address is One Riverside Plaza, Columbus, Ohio 43215. I am employed by American Electric Power Service Corporation (AEPSC) as Vice President and Chief Security Officer. AEPSC, a wholly owned subsidiary of American Electric Power Company, Inc. (AEP), provides centralized professional and other services to affiliates of AEP, which includes Southwestern Electric Power Company (SWEPCO or Company).

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND, BUSINESS EXPERIENCE, AND PROFESSIONAL QUALIFICATIONS.

A. I graduated from Capella University with a Bachelor of Science degree, and I have obtained multiple technology and security certifications over the years. In addition, I have completed the FBI Citizens Academy, an Executive Level Targeted Development program, and multiple Corporate & Defense Department Leadership courses.

Before joining AEP, I served as security and intelligence expert with the United States Air Force (USAF) for 10 years and was an original member of the USAF Computer Emergency Response Team. I received two Commendation Medals during my USAF career. In the mid-1990s, I received my second Commendation Medal for my work on the Computer Emergency Response Team in response to a hack on several United States Department of Defense facilities.

I joined AEP in 1998 as an Information Security consultant. I became an AEP employee in May 1990, hired to lead operational cybersecurity functions. Prior to

being named to Chief Security Officer, I was the director of Cybersecurity Intelligence & Defense. I was appointed Vice President and Chief Security Officer for AEPSC on October 30, 2019. The office of the Chief Security Officer is responsible for the Enterprise Security Programs for AEPS and all AEP subsidiaries, including SWEPCO. The Enterprise Security Program is focused on protecting employees, contractors and visitors, as well as all AEP assets. That goal is accomplished through a physical security program that provides physical protections and training and a cybersecurity program that protects the AEP network and associated hardware and software.

I also serve on the Cyber Security Advisory Board for McAfee, IronNet, DOE CRISP, Hocking College and other security related efforts.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PUBLIC UTILITY COMMISSION OF TEXAS OR BEFORE ANY OTHER REGULATORY BODY?

A. No.

II. PURPOSE OF TESTIMONY

Q. PLEASE DESCRIBE THE PURPOSE OF YOUR TESTIMONY.

A. My testimony has several purposes. First, to demonstrate the necessity of AEPSC's security services in support of SWEPCO's utility operations, I provide an overview of AEP Security's organization, staffing, and services. In particular, I explain how AEP Security supports SWEPCO.

Second, I describe the test year charges from AEP Security to SWEPCO and show that these costs are reasonable and necessary. In this connection, I describe the

reasonableness of the AEP Security trends in costs billed to SWEPCO. I further explain how AEP Security controls its costs through prudent budgeting, process improvement, use of outsourcing, and appropriate staffing levels. Further information on the allocation and billing of AEP Security affiliate charges is discussed in the testimony of SWEPCO witness Brian J. Frantz.

III. ORGANIZATION OF AEP SECURITY SERVICES

Q. WITH REGARD TO THE UTILITY OPERATIONS OF SWEPCO AND THE OTHER AEP OPERATING COMPANIES, WHAT DOES AEP SECURITY CONSIDER TO BE ITS MISSION?

A. The mission of the AEP Security team is to protect the people, information, and assets of our utility operating companies and our customers' way of life, though proactively making safety, compliance and reliability the driving factors in AEP's security programs.

As a component of the nation's critical infrastructure, the electric power grid is subject to an array of security threats, from naturally caused phenomenon such as extreme weather to vandalism, terrorism and insider risks that jeopardize reliability, safety and data security. The stakes are high; our response to these threats affects our customers, our reputation and the reliability of the power grid.

The growing risk from third-party products and services has prompted new regulations to protect the grid's resilience and reliability. As threats have become more sophisticated and massive breaches have occurred outside of AEP, it is a continual challenge to maintain the security of the information and assets of

SWEPCO and the other AEP operating companies. Faced with this reality, our comprehensive risk management strategy – known as "Defense in Depth"—must address a broad and ever-increasing range of possible security threats, such as physical theft, unauthorized access to data, and incidental threats as a result of dangers that do not specifically target protected systems or assets.

Q. PLEASE PROVIDE SOME EXAMPLES OF HOW AEP SECURITY HAS ADDRESSED THESE IMPORTANT SECURITY ISSUES.

A. The AEP leadership team continually takes steps to enhance the AEP system's capabilities for identifying and neutralizing security risks and threats. Those efforts are highlighted in the sections below:

24x7x365 Monitoring

AEP operates a dedicated 24x7x365 Cyber Security Intelligence and Response Center and a dedicated Physical Security Operations Center responsible for monitoring the AEP System for security threats as well as collaborating with internal and external threat-sharing partners from both industry and government. The operators that staff those positions have the authority to take immediate action to minimize risk to SWEPCO and other AEP affiliates.

Industry Collaboration

AEP is a member of a number of industry specific threat and information sharing communities, including the Department of Homeland Security and the Electricity Information Sharing and Analysis Center. Sharing information regarding security threats across the industry allows AEP Security to learn from the experience of its peers and to share best practices as they evolve.

Enterprise Risk

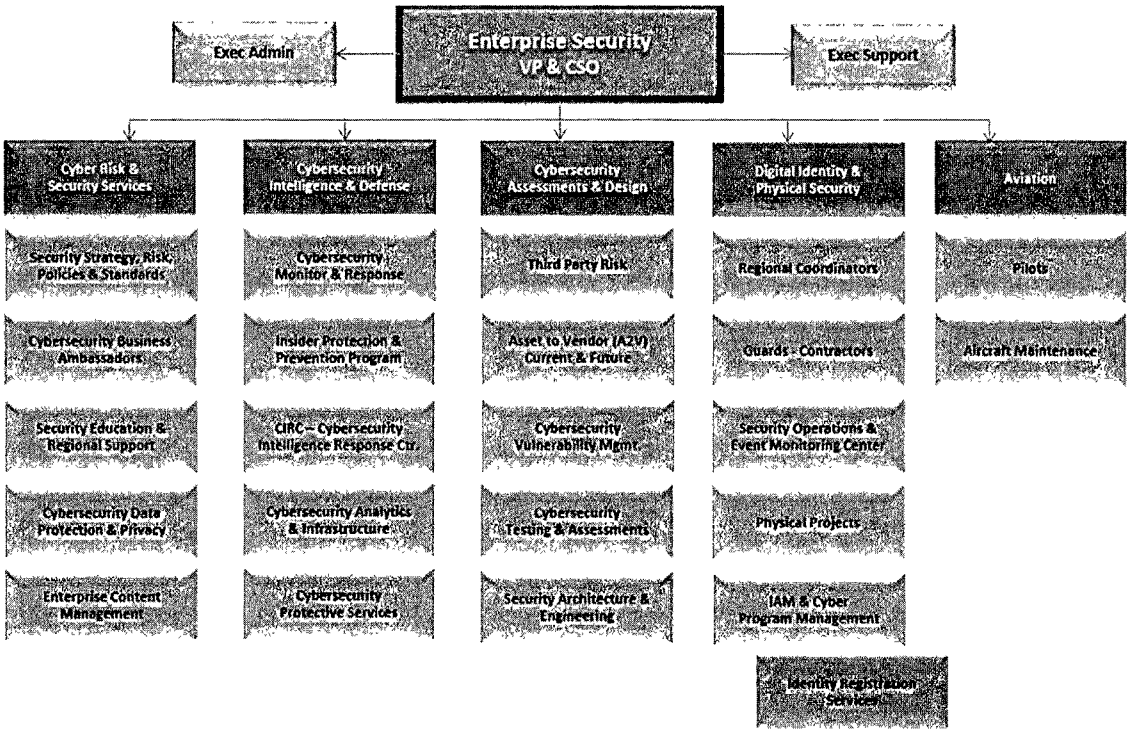
In 2017, AEP incorporated cyber and physical security risks into the new enterprise risk management framework. This provides a more comprehensive approach to understanding these risks in relation to other enterprise risks. This approach allows us to make security decisions based on the level of the risk posed to AEP by looking at our total risk profile, and supports more informed decisions based on our priorities and resources. The enterprise risk framework uses legitimate worst-case scenarios that are plotted on a graph with impact and likelihood as the axes. This risk assessment allows AEP Security to determine how various security investments could change the risk profile by reducing the likelihood or the impact of a given security breach.

Technology

AEP Security leverages advanced technologies to monitor and respond to cyber and physical threats. On the physical side, a centralized access control system along with cameras and alarm systems are monitored by a centralized dedicated physical operations center that utilizes a security event and information management tool to monitor and respond to events. On the cyber side, various network and host-based technologies are leveraged through strategic vendor and government relationships. Advanced threat technologies acquired through both commercial and strategic partnerships are coupled with security analytics technologies to enable high fidelity alerting and automated response.

Q. PLEASE PROVIDE AN OVERVIEW OF HOW THE ORGANIZATION IS STRUCTURED.

A. Please see the AEP Security organizational chart below. There are five departments under my oversight that are further described in the chart below—Cyber Risk and Security Services, Cybersecurity Intelligence and Defense, Cybersecurity Assessments, Digital Identity and Physical Security, and Aviation. SWEPCO is not seeking recovery for any Aviation costs in this case.



Q. WHAT ARE THE ACTIVITIES AND SERVICES PROVIDED BY THE VARIOUS DEPARTMENTS WITHIN AEP SECURITY, OTHER THAN AVIATION?

A. The detailed description of these departments is as follows:

Cyber Risk and Security Services—This department has all the teams which are key to the success of cybersecurity operations and AEP security. The Cybersecurity Ambassadors have individual members aligned with each part of the business to

ensure we can properly understand and support the utility functions. They also serve as a first point of contact on cybersecurity issues for the business. The Security Education & Regional Support team runs all security awareness functions across AEP ranging from videos to communications to phish testing. This team also has individuals located within each operating company to ensure we understand their unique requirements. Cybersecurity Architecture & Engineering provides guidance and strategy for projects and programs across AEP. Cybersecurity Registration Services performs user and system account management for AEP. Cybersecurity Data Protection & Privacy provides programs to protect AEP's critical customer, employee and proprietary data. Cybersecurity Programs & Standards works on all project management cybersecurity projects and is responsible for all AEP Security policies and standards.

Cybersecurity Intelligence and Defense— All operational cybersecurity functions are included in this organization. Cybersecurity Testing & Assessments includes dedicated employees to perform penetration testing across AEP, application security experts and a Third Party Risk function. The Cybersecurity Vulnerability management team tracks all vulnerabilities across AEP, which get evaluated on patching and mitigations. Cybersecurity Analytics manages all enterprise logging and leverages that data to perform various analytics to identify insider and difficult-to-detect threats. Cybersecurity Infrastructure manages all of the network security systems and devices that monitor and protect AEP. Cybersecurity Protective Services is responsible for security of all enterprise end points, desktops, servers, etc. AEP has a large number of complex security tools deployed on each laptop/desktop.

Cybersecurity Monitor & Response and the Cyber Intelligence Response Center is our 24x7x365 team of experts monitoring and responding to external intelligence and events in real-time.

Cybersecurity Assessments and Design – Cybersecurity Testing & Assessments includes dedicated employees to perform penetration testing across AEP, as well as application security experts that work with development teams to scan code as it is written/modified. The Third Party Risk team is responsible for defining and maintaining the program for vendor risk identification, assessment, and management. This program ensures risks are identified and addressed for all products and services procured and/or implemented by AEP. The Cybersecurity Vulnerability Management team tracks all vulnerabilities across AEP, which are evaluated on patching and mitigations. Cybersecurity Architecture & Engineering provides guidance and strategy for projects and programs across AEP. The Asset to Vendor (A2V) Program is a third-party risk management service offering that is well received by the industry and now contributing to AEP financially while managing AEP risk.

Digital Identity and Physical Security - The Digital Identity & Physical Security Team has the responsibility for both electronic and physical access to AEP systems and assets and overall access control. This team manages all Cyber and Physical Projects with a dedicated Project Management Office. The Digital team is comprised of Identity Registration and Cyber Project Management. The Identity Registration team processes electronic requests for on-boarding and off-boarding of access levels within our systems for people, process and technology. The Physical team handles badging systems, alarm systems, fencing and risk assessments. The

Physical Security Operations Center is the 24x7x365 monitor and response center for security events across AEP. The Physical Security Coordinators are individuals assigned to each operating company, often retired law enforcement, to handle events across the state where they are located. The contract guard force is funded and managed by AEP Physical Security.

Q. HOW HAS THE AEP SECURITY ORGANIZATION CHANGED IN RECENT YEARS?

A. Our most important change was to combine the physical and cyber security departments. Combining our physical and cyber security efforts allows AEP to leverage the expertise of both teams to make our security operations even more robust in the face of increasingly more sophisticated and persistent threats. AEP now has one overall security program, which makes messaging, training and interactions with employees and contractors more efficient. The combination of the two organizations has resulted in greater visibility for the program and increased executive level support. For instance, the Chief Security Officer reports directly to the General Counsel, who reports to the Chief Executive Officer.

Q. WHY HAS AEP CHOSEN TO TAKE A CENTRALIZED APPROACH TO THE PROVISION OF PHYSICAL AND CYBER SECURITY SERVICES?

A. A centralized organization allows for cost efficiencies through utilization of a single staff serving multiple affiliates, as well as shared technology. Absent use of the centralized model, each operating company would need to separately hire its own fully skilled security staff and deploy expensive technologies. AEP runs one IT/Telecom network and only two Internet access points across the entirety of its

eleven state footprint, thus allowing for more efficiency in the deployment and use of its technology, and particularly in security monitoring and response functions.

Q. DOES AEP SECURITY HAVE STAFF RESOURCES DEVOTED SPECIFICALLY TO SWEPCO?

A. Yes. AEP Security has dedicated Physical Security Region Coordinators located at each operating company, including SWEPCO. The coordinators have a law enforcement background and bring a wealth of experience and useful connections with local law enforcement agencies. SWEPCO has a Physical Security Region Coordinator employed in Shreveport, Louisiana. AEP Security also has Regional Security Ambassadors assigned to each operating company, including SWEPCO. Regional Security Ambassadors are the liaisons between their assigned business area or region and the other security teams. They are the primary contacts for most non real-time functions that a business unit or individual may require when in need of AEP Security services.

Q. ARE THESE SERVICES DUPLICATED BY PERSONNEL OUTSIDE AEP SECURITY, WITHIN SWEPCO OR ANY OTHER ENTITY?

A. No. There is no duplication of the work performed by AEP Security services for SWEPCO or any other AEP business unit or other entity.

Q. ARE THE SERVICES PROVIDED BY THE AEP SECURITY ORGANIZATION TO SWEPCO NECESSARY FOR SWEPCO TO PROVIDE RELIABLE UTILITY SERVICE?

A. They most certainly are. AEP Security services are necessary to ensure the integrity of SWEPCO's facilities and information systems, so those assets remain available for

the reliable service of customers and support for SWEPCO and AEPSC employees in their provision of that service.

IV. REASONABLENESS OF THE SWEPCO SECURITY COSTS

Q. WHAT ARE THE ADJUSTED TEST YEAR AFFILIATE AEP SECURITY OPERATIONS AND MAINTENANCE (O&M) COSTS BILLED TO SWEPCO?

A. The AEP Security adjusted O&M expenses for SWEPCO for the Test Year are $1,181,971.

The test year costs are broken out by major function in the table below:

Table 1

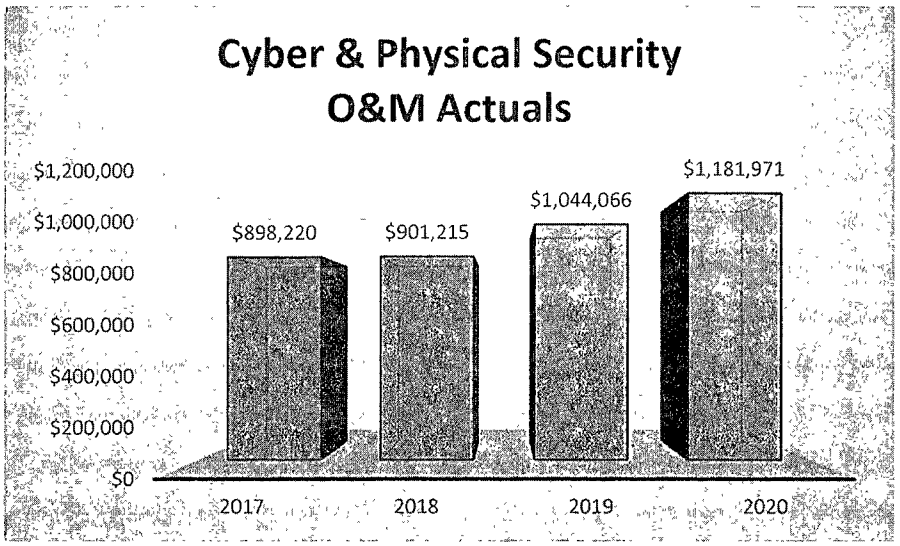
AEP Security Services Billed to SWEPCO	
	Test Year
Cybersecurity Intelligence & Defense	513,145
Cyber Risk & Security Services	205,492
Cybersecurity Assessments	66,178
Digital Identity and Physical Security	397,156
Total Adjusted Test Year	$1,181,971

A. Cost Trends and Budget Performance

Q. WHAT HAS BEEN THE TREND IN AEP SECURITY COSTS BILLED TO SWEPCO?

A. Please refer to the following chart, which shows costs billed for 2017-2019, and the Test Year.

Figure 1



Q. WHAT ARE THE KEY DRIVERS OF THE INCREASE IN O&M CHARGES BETWEEN 2017 AND THE TEST YEAR, IN TERMS OF STAFFING AND SECURITY PROGRAMS AND INITIATIVES?

A. Cyber and physical security threats are increasing daily, and the upward trend reflects AEP's efforts to meet these emerging threats by increased protective measures such as adding specialized security staff and advanced technology. AEP has focused on the needs of the accelerating digital business, IT and OT convergence, cloud computing, and general awareness. People influence security far more than any technology or policy, so AEP must invest in tools that increase security awareness and influence behavior.

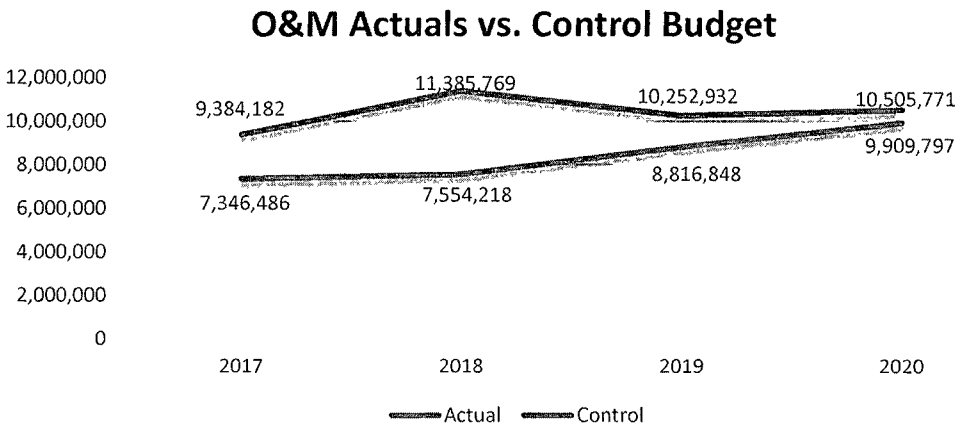
Q. WHAT TYPES OF PROOF OF REASONABLENESS OF THESE COSTS DO YOU PRESENT IN THIS TESTIMONY?

A. I use several different indicators of the reasonableness of the AEP Security costs. These include: budget performance and budget controls; process improvements; FTE trends; utilization of outsourcing; and cost effectiveness tools.

Q. HOW HAS AEP SECURITY PERFORMED OVERALL IN TERMS OF BUDGETED TO ACTUAL EXPENSES?

A. As you can see in the chart below, AEP Security consistently manages the budget to ensure we do not spend over the budgeted amount. This chart reflects security budget and actuals under the control of the Chief Security Officer.

Figure 2



Q. WHAT DO YOU CONCLUDE FROM THESE COST TRENDS?

A. AEP Security is always looking for cost efficiencies and is typically very effective at managing our budgets.

B. Budgeting Controls

Q. WHAT TYPE OF BUDGETING PROCESS IS EMPLOYED WITH REGARD TO AEP SECURITY O&M?

A. Budgets are developed annually for each AEP organization. The current year budget is compared to actual spend on a monthly basis and year-end projections are revised as appropriate. The budget is created by considering corporate and operating company financial and business requirements, operational and cost benchmarks, and market conditions relevant to AEP's overall electric utility business.

Q. ONCE BUDGETS ARE IN PLACE, WHAT FURTHER COST MONITORING OCCURS?

A. Within AEP Security, directors are responsible for monitoring and controlling budgets that are assigned to their respective teams or projects. The O&M budget is managed through a collaboration of AEP Security and Corporate Planning & Budgeting (CP&B). Actual expenditures are monitored against the budget every month. Proposals for new projects are reviewed by all security managers and directors to ensure that the work is necessary and can be reasonably funded.

C. Process Improvements

Q. WHAT ARE THE MAJOR AEP SECURITY PROCESS IMPROVEMENT EFFORTS TO ENSURE THAT AEP SECURITY SERVICES SUPPORT SWEPCO'S UTILITY SERVICE IN A COST-EFFECTIVE MANNER?

A. AEP Security has added a dedicated project management function and an organizational change management function to ensure that projects are completed on time and at or under budget. The organizational change management function was added to ensure adoption of new technology and new or modified processes and procedures. The number of FTEs in the Security Ambassador function has increased in an effort to identify business needs early in the process to allow security to be

built-in to the technology instead of bolted-on later. This methodology drives costs down and increases adoption by end users.

Q. HOW DOES AEP SECURITY ENSURE THAT EFFECTIVE SERVICES ARE DELIVERED TO SWEPCO?

A. I am part of the AEP Quarterly Management Review meeting, where I interact with the President of SWEPCO. In addition, the Region Security Coordinator attends the quarterly SWEPCO matrix leadership meetings. Through these interactions, we ask for feedback regarding the level of service and learn about new issues that impact SWEPCO.

AEP Security solutions are designed to benefit the enterprise, including all operating companies. By leveraging a centralized service model, SWEPCO gets the benefit of efficiencies in cost and process and a significantly more mature security organization. If an event occurs anywhere within the AEP Enterprise, AEP Security will implement mitigation measures to ensure the threat is contained and does not occur more broadly across the system.

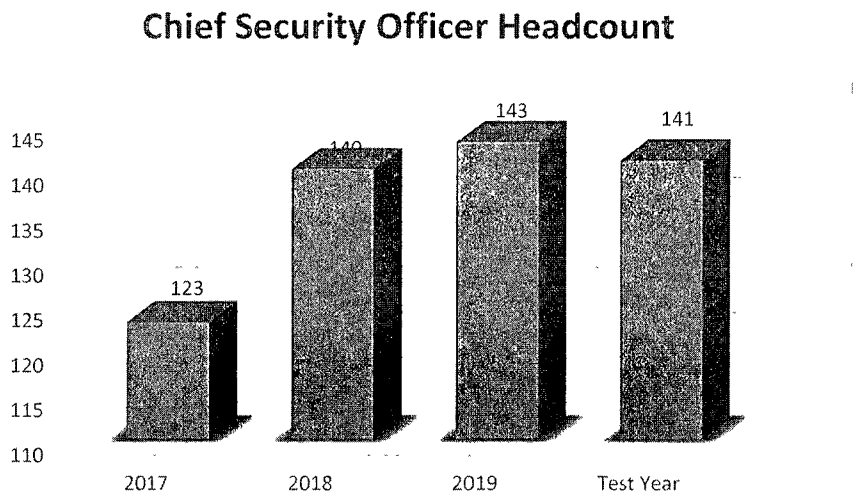
D. FTE Trends

Q. WHAT ARE THE STAFFING TRENDS FOR AEP SECURITY?

A. Figure 3 below illustrates how the organization has grown in headcount to meet the growing needs of cyber and physical security. The growth in headcount at AEP Security has come in concert with a growing need for mounting an effective defense against ever-increasing security threats with the potential to disrupt to SWEPCO and its customers. AEP Security staff has grown only as needed. Moreover, AEP Security has experienced very good retention of staff including entry level positions,

which is not common for security staff. Good staff retention is a huge benefit to maintain a strong culture and continuous maturity growth.

Figure 3



E. Outsourcing

Q. HOW DOES OUTSOURCING PROVIDE A MEANS TO CONTROL AEP SECURITY COSTS?

A. Contractors are utilized for specialized niche skills that fluctuate with project demands. AEP Security also uses outsourcing for the physical guard force staff and the Physical Security and Event Monitoring Center. Using a contracted guard force and operations personnel is much less expensive than hiring AEP employees. The guard force company and the operations center vendor are more efficient in recruiting, hiring and training the security officers than AEP Security could be. The guard force company is a global company that can use its size to achieve economies of scale in purchasing uniforms and equipment related to their function.

F. Cost-Effectiveness

Q. HOW HAS THE INCREASED DEMAND FOR SECURITY SERVICES AFFECTED AEP SECURITY COSTS?

A. AEP Security continuously evaluates cyber and physical security defenses to ensure protection of the electric grid, business operations and, in particular, customers' personal information. While it is impossible to ensure complete security protection, AEP Security balances investment with compliance requirements and risk mitigation. While security mitigation costs continue to rise, AEP Security utilizes internal process controls and targeted implementation to ensure costs are appropriately controlled.

Q. WHAT TYPE OF CORPORATE OVERSIGHT OF AEP SECURITY'S ACTIVITIES IS IN PLACE TO ENSURE THAT ITS SERVICES SUPPORT SWEPCO UTILITY SERVICE IN A COST-EFFECTIVE MANNER?

A. The corporate oversight process begins approximately six months prior to each calendar (fiscal) year. The Chief Financial Officer leads a process to establish O&M and capital budget guidelines for the following year. The AEP Security leadership team works within these guidelines to prioritize and plan detailed expenditures.

The O&M budget is managed through a collaboration of AEP Security and CP&B efforts.

V. SUMMARY AND CONCLUSION

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. AEP Security has created a converged security organization that combines physical and cybersecurity. This model creates a one-stop security shop for our internal and external customers and leverages common functions across both domains in a cost-effective manner. Investments in the security program are risk-based. AEP Security evaluates risk by conducting internal and external tests and interfacing with peers, third-party experts and government partners. AEP operates a single network across eleven states and seven operating companies. SWEPCO benefits from the total corporate investment in staff and tools to protect the network as opposed to a model where each operating company attempts to protect its own network and assets. AEP Security constantly seeks cost-effective ways to protect people, assets, data and the integrity of the grid and the distribution delivery systems.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

EXECUTIVE SUMMARY OF STACEY STOFFER

Stacey Stoffer, Director of Telecommunications Planning & Projects for American Electric Power Service Corporation (AEPSC), is responsible for the system-wide capital investment planning, project scoping and execution to support American Electric Power Company, Inc. (AEP) telecommunications systems. Her responsibilities include providing telecommunications support for Southwestern Electric Power Company (SWEPCO or the Company) and all other AEP Operating Companies.

Ms. Stoffer provides an overview of AEP's Telecommunications organization, staffing, and services it provides. Ms. Stoffer explains how Telecommunications is organized to streamline access, reduce complexity in providing solutions, and increase flexibility and agility in responding to AEP's business needs. Ms. Stoffer describes Telecommunications' use of common centralized resources to meet common needs resulting in service delivery with the lowest reasonable cost and greatest efficiency. The centralized provision of telecommunications services creates the ability to leverage purchasing power and apply standard architectures for promoting cybersecurity and improving network availability.

Ms. Stoffer describes Telecommunications' mission to provide reliable and secure telecommunications services that deliver value to SWEPCO and other AEP business units. Each service provided to SWEPCO is essential to the mission of providing safe and reliable utility service in a cost-effective manner. Telecommunications provides essential support for the systems that allow SWEPCO to coordinate outage response and repair, perform system operation, manage system construction and maintenance, maintain cybersecurity, bill its customers, and account for its costs. This support from Telecommunications enables virtually

all SWEPCO employees to perform their work and serve customers as effectively and efficiently as possible.

The total test year costs billed to SWEPCO for Telecommunications services is $556,394. To demonstrate the reasonableness and necessity of these charges, Ms. Stoffer analyzes cost trends and budget performance, process improvements, budgeting controls, full-time equivalent trends, outsourcing reviews, and cost-effective additions of services.

The total amount of Telecommunications-related capital additions included in SWEPCO's rate base since its last rate case is $2,582,002. Ms. Stoffer describes how the costs of Telecommunications capital projects are captured and tracked and discusses the processes in place to ensure that the costs of such projects are reasonable. Ms. Stoffer asserts that the majority of the capital projects relate to radio and microwave upgrades.

PUBLIC UTILITY COMMISSION OF TEXAS

APPLICATION OF

SOUTHWESTERN ELECTRIC POWER COMPANY

FOR AUTHORITY TO CHANGE RATES

DIRECT TESTIMONY OF

STACEY STOFFER

FOR

SOUTHWESTERN ELECTRIC POWER COMPANY

OCTOBER 2020

2094

TESTIMONY INDEX

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND POSITION.

A. My name is Stacey Stoffer. I am Director of Telecommunications Planning & Projects for American Electric Power Service Corporation (AEPSC). My business address is 850 Tech Center Drive, Gahanna, Ohio 43230. I am responsible for the system-wide capital investment planning, project scoping and execution to support American Electric Power Company, Inc.'s (AEP) telecommunications systems.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND WORK EXPERIENCE.

A. I have 26 years of experience at AEP in the areas of Telecommunications, Information Technology (IT), Finance, and Organizational Performance & Transformation. I hold a Master of Business Administration degree, a Project Management Professional certification, and a Bachelor of Science degree in Mathematics.

Q. ARE YOU A MEMBER OF ANY PROFESSIONAL GROUPS OR ASSOCIATIONS?

A. Yes. I am a member of the Project Management Institute, which is a professional organization of project management that spans all industries.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PUBLIC UTILITY COMMISSION OF TEXAS OR BEFORE ANY OTHER REGULATORY BODY?

A. No.

II. PURPOSE OF TESTIMONY

Q. PLEASE DESCRIBE THE PURPOSE OF YOUR TESTIMONY.

A. My testimony has several purposes. First, I provide an overview of AEP's Telecommunications organization, including its staffing and services. In particular, I

explain how Telecommunications services are provided to Southwestern Electric Power Company (SWEPCO or the Company). This information supports the cost analysis that AEP Operating Companies, including SWEPCO, use to understand their delivered Telecommunications services. Second, I explain how Telecommunications controls its costs through budget, staffing, and process monitoring. Third, I show that the capital costs Telecommunications bills to SWEPCO are reasonable and necessary for SWEPCO to gain efficiency and effectiveness in serving its customers.

III. ORGANIZATION OF TELECOMMUNICATIONS

Q. WITH REGARD TO THE UTILITY OPERATIONS OF SWEPCO AND THE OTHER AEP OPERATING COMPANIES, WHAT DOES TELECOMMUNICATIONS CONSIDER TO BE ITS MISSION?

A. The mission of Telecommunications is to provide reliable and secure telecommunications services that deliver value to our customers (SWEPCO and other AEP business units), while striving for continuous improvement in an open and safe work environment.

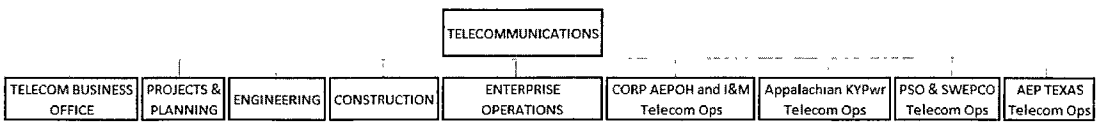
Q. PLEASE PROVIDE SOME EXAMPLES OF THE TELECOMMUNICATIONS SERVICES PROVIDED TO SWEPCO.

A. Telecommunications provides network communication across the SWEPCO footprint. This enables connectivity to Distribution and Transmission Dispatch Centers to monitor and control the organization's SCADA (Supervisory Control and Data Acquisition) systems. Among other things, Telecommunications provides a communication path that allows automated meter reading and a radio system that supports storm restoration and outage management. Telecommunications provides a reliable network backbone with

redundancy to critical locations that mitigates the risk of network outages. This redundancy is achieved through a robust fiber network and microwave communications. Telecommunications also supports the local LAN/WAN network including all IP based assets, which include the Cisco desk phones and computers.

Q. PLEASE PROVIDE AN OVERVIEW OF HOW TELECOMMUNICATIONS IS ORGANIZED.

A. Telecommunications is one of eight organizations aligned under the Chief Administration Officer. All telecommunications services are centrally managed. The chart below depicts the Telecommunications organizational structure.



Q HAVE THERE BEEN ANY RECENT ORGANIZATIONAL CHANGES IN TELECOMMUNICATIONS?

A. The Telecommunications and IT organizations were one IT department until October 2017. At that time, Telecommunications became its own department aligned under the Chief Administration Officer of the Shared Services Organization. The increase in communication equipment communications beyond offices into stations, along distribution lines, and in meters at the home necessitated increase focus to achieve business objectives. Telecommunications has operations employees directly located within SWEPCO to support the communications equipment.

Q. WHAT IS THE PURPOSE OF THE TELECOMMUNICATIONS ORGANIZATIONAL STRUCTURE?